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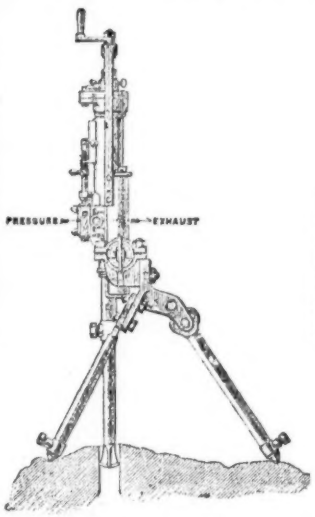

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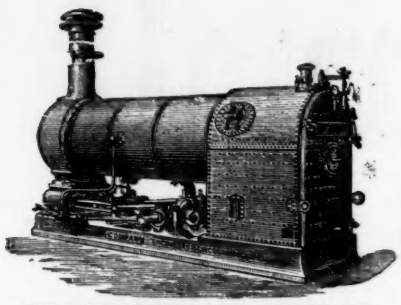

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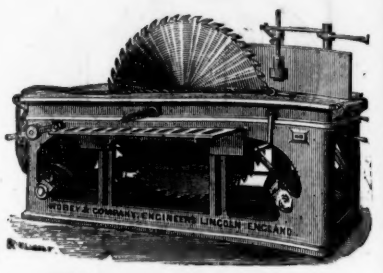

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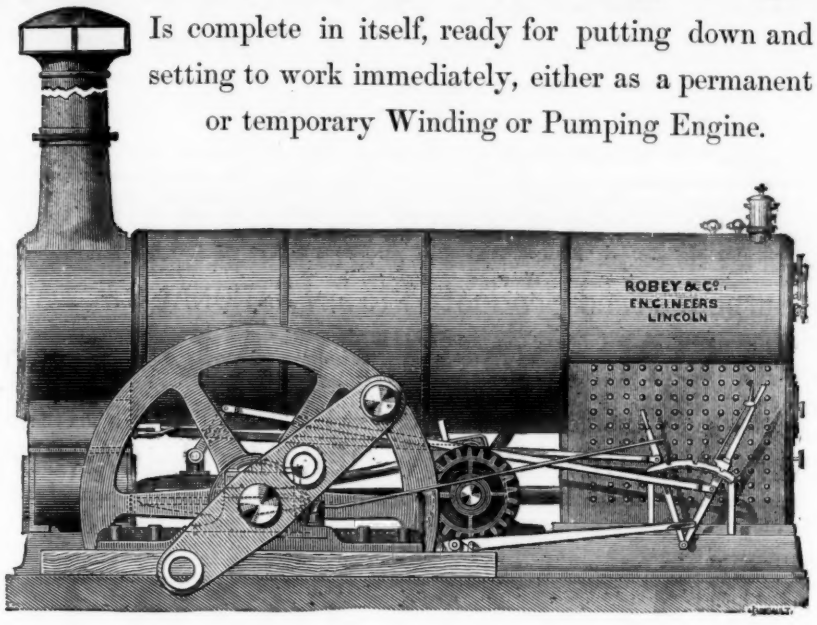

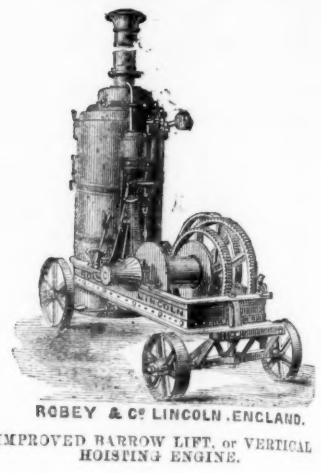

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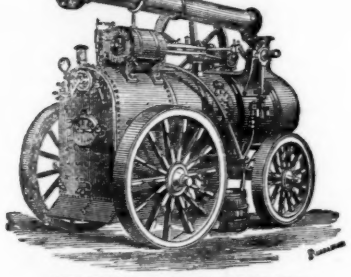

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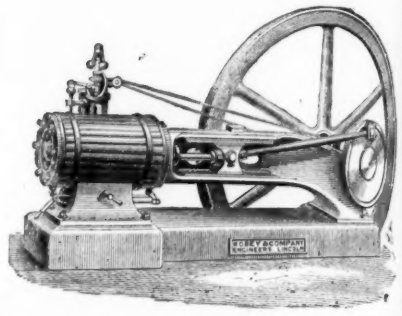

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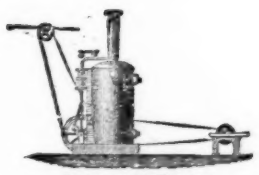

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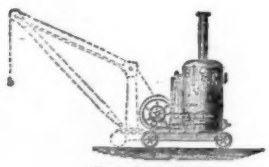

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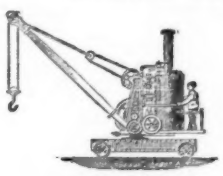

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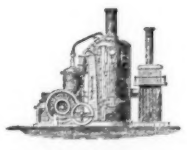

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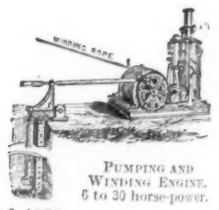

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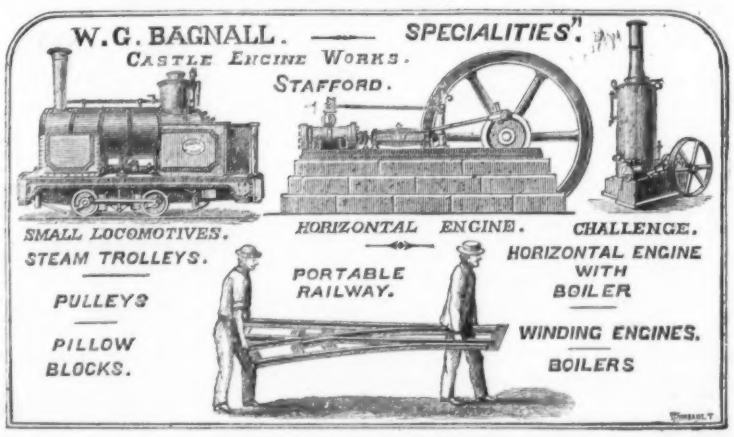

Original Correspondence.

COLLIERY EXPLOSIONS.

SIR,—Will you with your accustomed fairness allow me to state with regard to Prof. Forbes's letter in last week's Journal that my father, Mr. Geo. F. Ansell, invented and patented some years ago an instrument, which he calls "Ansell's Fire-damp Indicator," for detecting and giving warning by means of a bell at the surface, or any other convenient place, of the presence of fire-damp in the pit. Now, Sir, I venture to think that had this instrument been in use we should have had the number of disastrous accidents in coal mines at least considerably reduced.

With your permission I may also add that my father patented at the same time his pocket instrument for measuring the quantity of gas, capable of detecting the 1-10th of 1 per cent. Both these instruments are well known to colliery owners and scientific men.

London, Feb. 5. F. GRAHAM ANSELL.

COLLIERY EXPLOSIONS—THEIR CAUSE AND REMEDY.

SIR,—Referring to the late sad colliery explosion I send you copy of a letter I have received, and which I trust you may deem worthy of insertion in your valuable Journal. I shall be very pleased if it will lead to any enquiry into the cause of these deplorable disasters, and be the means of preventing so frequent a recurrence of them.

Liverpool, Jan. 27. VAUGHAN W. JONES.

SIR,—In answer to your question—What is the cause of explosions in coal pits, and is there no way of preventing them? I beg to say that explosions are due to inflammable gases mixed with air being fired in various ways, and to prevent them these gases must be kept out of the pit. These gases are brought into the pit in the following manner: the ventilating apparatus of all coal pits exhausts the air, and fresh air enters through the various cavities in the coal, and brings with it the gases; another effect is to create in the pit an artificially low barometer, which is favourable to the development of gases; if the pit were free from gas a firebrand could be carried through it with safety; the gas does not exist in the coal, but is developed by dry rarified air passsng in contact with it. To render a coal pit perfectly safe the air must be forced into it with a pressure blower (Root's being preferred), and by this means maintain the barometer in the pit about 1° higher than it is on the surface. This will retard the development of gases, and any produced will be carried away from the pit through the same cavities that the air now enters. Working the air in this way will cost no more than the present practice, but it will be necessary to force the air through sheet-iron pipes to the end of each working gallery. HENRY C. BULL.

Southampton Buildings, London.

EXPLOSIONS IN COLLIERIES.

SIR,—Loss of life by explosions in collieries can undoubtedly be reduced to a minimum. Managers in charge of collieries have responsibilities that time only can cause them to regard with equanimity. The cause—gas ignited by flame; the effect—death, disaster, and misery. These terrible disasters so frequently occurring should cause both those who have been present and those who have so far escaped to adopt every measure that would prevent them. The argument that many use, "that they have so far escaped"—and I trust may still continue to do so—does not free them from blame; and they may rest assured that sooner or later some of them will have to regret not having taken warning by the preceding explosions. It has been clearly demonstrated, times innumerable, that it is impossible at all times and seasons to ventilate collieries so as to prevent gas mixing with the atmosphere to an explosive point. It requires but few minutes or even seconds to foul the workings. The quicker the gas travels the larger the area fouled. If an explosion took place each time circumstances arising from accident, carelessness, neglect of orders, or natural causes permitted gas to mix with the air to an inflammable point under the present system of working, the papers would be inundated with accounts of loss of life and property. Common-sense would tell one that the temperature of flame necessary to ignite gas should be so guarded as to prevent its carrying ignition throughout the surrounding atmosphere.

The use of powder, if continued in mines, will be at the risk of the deaths of large numbers of men. It has already lost the lives of hundreds, nay thousands, and it is high time it is abolished. Certainly in any colliery where life has been lost by the explosion of gas primarily caused by blasting it should ever afterwards be prohibited. But it would be far better, if before such pits received that qualification, that its use should be voluntarily dispensed with.

Even after blasting there is the possibility of explosions taking place with naked lights, tampering with lamps, or the use of imperfect ones; and also under certain conditions with lamps that are safe if not subjected to too high a pressure of explosive gas. Safety-lamps of the best possible construction alone should be used—such as are self-extinguishing if tampered with, submitted to rough usage, or to a pressure of gas. That such lamps can be used is confirmed by the numerous cases that have been reported from time to time, and if enquiry were made a much larger number that have not been reported, in which those concerned have expressed their full conviction that if blasting had been going on, or inefficient lamps been in use, an explosion would inevitably have taken place. It is not safe to blast, to use naked lights or imperfect lamps in any colliery where gas is given off, much less to blast where safety-lamps are used. Increased ventilation and greater rapidity in working coal increase the dimensions of an explosion. A small body of gas igniting in an atmosphere impregnated with fine coal dust undoubtedly increases the destruction. The safest system of lighting collieries compels good ventilation in contradistinction to causing neglect. Lamps could be so regulated that the air, if not sufficiently pure, would cause them to burn imperfectly or go out.

These suggestions are by no means new. They have been in practice for some time in a number of collieries, with entire freedom from loss of life from explosions. The feeling that it is the right system is rapidly gaining ground, but I fear many more disastrous explosions of even greater magnitude than those that have taken place will occur before the causes which operate against the radical changes necessary to take place are made subservient to the great importance of providing the best means to prevent loss of life.

COLLIERY MANAGER.

PICKARD, WHAT CAN I DO FOR YOU?

SIR,—I dare say electioneering speeches—addresses to fellow-electors—should not be too closely criticised; but when a gentleman of Mr. Lancaster's mining experience makes a statement dealing with the statistics furnished him by "my friend Mr. Pickard," one looks for something.

Mr. Lancaster addressing a meeting of electors at Wigan, as reported in the Wigan Observer, expresses himself freely on the Mines Regulation Act. It is a good enough Act, but he predicted it would fail, and of course it has; and this is the reason—because the mines do not belong to the State. Mines ought to be granted in square plots, as on the Continent. You are asked there if you are prepared to work upon certain conditions, and to work the mines scientifically. "But in this country the inspection of mines never begins until the damage is done." Mr. Lancaster would have you infer that the landlord only cares for his rent. He has no agents, nor does he put any restriction on the tenant as to the mode of working. Does he expect anyone to believe this?

He goes on to state that if the Wigan mines were worked on the same principle as those of Northumberland and Durham the loss of life would be 92 instead of 197. Now Mr. Lancaster, I believe, works or did work coal in Lancashire and Derbyshire, and also in South Wales. Does he adopt the North of England special rules and officials at any of these places, and if not why not?

If he looks at the heading "Falls in Mines," he will find that the proportion of deaths in the North and Durham is much less than in the three districts named. And why? Other things being equal, because of the mode of observance of the 16th general rule. I happened to be in the House of Commons the night the 16th general rule was discussed, and I think I remember hearing Mr. Lancaster speaking vigorously against it. Why doesn't he try the North of England rules, which fairly work out this rule? He can do that for you, Mr. Pickard.

He talks of the mines belonging to Government, or Government managing them. He must know he is talking nonsense. Our mines are safer than the Belgian or other continental mines; and what is the Mines Act but Government interference in mines? Does it not go far enough for him? or, is he still asking, "What can I do for you, Mr. Pickard?"

AN ENGINEER.

KEARSLEY MINE.

SIR,—Kearsley Mine had 1500 cubic feet of air per minute. If the airways had an area of 40 ft. this would give 37 ft. per minute, I think they might safely use me there. Being of a diffident disposition, although the idea has been in my mind, it has never been mooted by me till now. Only think of my tormentors badgering me when they have mines where so small a current was said to be sufficient!

A SCOTCH LAMP.

UNDERGROUND HAULING.

SIR,—It is about 12 years since the Rope Committee of the North of England Mining Institute made their report. They experimented on four systems of underground haulage—the tail-rope, the endless chain, and the systems of endless rope hauling. The tail-rope system requires only one line of rails, but the ropes are three times the length of the plane; these entail great loss of power from the frictional resistance on sheaves. The speed of the trains is generally high—from 10 to 20 miles per hour—and the gradient may be undulating, either flat or steep, or on moderate inclinations. The delivery of coal, it may be observed, is not regular but intermittent; a train of 30 to 60 tubs are all at once landed at the bottom of the pit. The endless chain system requires two roads, and a greater first cost in road formation is requisite than with the tail-rope system. The speed of the chain is usually two to three miles per hour, the tubs being placed about 20 yards apart. There is thus a regular and continuous delivery of coal at the bottom of the pit, and the same with empty tubs from the pit to the workings, the chain in this system being twice the length of the entire plane. The endless chain system is in extensive use in the Burnley district of Lancashire, where from the great attention given to every detail of construction it has been brought to great perfection, and to work at a light cost. The most prominent advantages of that system as there in operation are—the first construction is made on a very simple and cheap method; the undulations of the road are not altered; the rails are made lighter and less expensively laid down than if trains at high speeds were run over them. The direction can be altered at any station by the angle of the gearing. The chain is supported on the tubs, hence the cost of sheaves and the friction over them is all saved. A chain should endure for 12 years on the main roads; after that it may be used some time longer on lighter "ginneys." In the working of the ginneys or branches the tubs are run into the main line of roads and taken from it without sidings, and without any detention of the main chain, the latter, in fact, moving continually and as long as tubs are being supplied in each direction. The roads and chains are extended quickly in any direction as the workings are advanced. The use of horse labour and of boys is thus economised by keeping the engine road well up to the working places.

Another feature in this system is not only that the tubs descending assist those ascending, but also that the descending tubs—if the ruling gradients are sufficiently steep—may work the tubs of the ascending side without any auxiliary power, and in this case what might be effected by two or more self-acting inclined planes, separated by flat gradients, could in all probability be effected, and more economically, by an endless chain system without alteration of the gradients.

The third system is that of the endless rope, with slow speed and two lines. The load in this system is also distributed over the whole length of the road. It is found that the substitution of a light rope for the heavy cumbrous chain is not productive of economy of working, the maintenance and labour being greater with a rope than with a chain. The speed of the rope is about three miles an hour. As in operation at Cinderhill Colliery, the tubs are run in short trains on the full and empty roads at the same time, not singly as in the ordinary way. Various methods are used for attaching the tubs to the rope, some having the rope resting in a fork or grip on the top of each tub, These have the disadvantage of causing the wheels to bear too much on the inner rail at curves, or to leave the rails altogether. By a more recent method the rope is carried under the tubs, the rope serving as a guide to them, and a steadier motion is effected. Special arrangements are required at curves, undulations, and branches, both for the endless rope and chain systems.

An endless rope on a quick speed has been introduced to a small extent in the mines af Cleveland and elsewhere; it is worked from the clip pulley, invented by Fowler, the laden train of tubs being brought out while the empty train is going in. The committee in their report give the preference to slow speed and distribution of the load, and consider the endless chain system as the most economical and applicable to all variations of gradient.

A summary of the results obtained by the committee as to the cost of each system is as follows:—First example, if the tail-rope system gives the power of the engine as 112 horse, 476 tons of coal hauled per day on an average length of 2133 yards, the average of the gradients being 1 in 213. The cost of labour per day was 1*l.* 7s. 7d. The total cost of ropes, maintenance, coal, and labour being 1·87d. per ton per mile. The cost per mile of wagon way was 723*l.*, and first cost of engine and boilers 1105*l.*

The example of the endless chain system used an engine of 20-horse power, 451 tons of coal hauled per day, the average length being 1389 yards; the average gradients 1 in 59. Cost of labour per day, 13s. 8d.; cost of chain, maintenance, coal, and labour 1·37d. per ton per mile; cost per mile of wagon way, 941*l.*; cost of engine and boilers, 276*l.*

The example of the endless rope system on slow speed has an engine of 29-horse power, hauling 443 tons of coal per day on a length of 849 yards. The average of gradients, 1 in 36; cost of labour per day, 1*l.* 10s. 1d.; cost of ropes, maintenance, coal, and labour 2·99d. per ton per mile. The first cost of wagon way was 893*l.* per mile, and of engine and boilers 973*l.*

The different systems of hauling underground have been viewed with great interest of late years, in part the result of commercial depression, and also in order to secure a safer system than the tail-rope principle offers. The slow speed and continuous suppiy system, both for underground and aboveground haulage, merits a preference over the other quick speed systems, as regards saving of labour and maintenance and the marked economy of power required to work it, as is shown by the statement in figures above given. It will be observed in the examples given that the cost of labour with endless chain is one-half that with tail-rope; the length of plane is less in the latter, but the gradients more severe. The total cost of hauling is ½d. per ton per mile less with the endless chain than with the tail-rope, but the first cost of roads is more in the chain system than in the other.

M. E.

COLOURED CARBON CANDLES FOR ELECTRIC LAMPS.

SIR,—Although I believe it to be altogether a mistake to rob the electric light of its beautiful whiteness, there are very many persons who class this amongst the objections to electric illumination, and as in these matters the taste, although it may be a vitiated taste of the majority, must be consulted, Mr. F. du Hamel, of Avenue-road, Regents Park. has performed a useful service in facilitating the production of, practically speaking, an absolutely homogeneous carbon, and when desired a carbon which will give colour to the flame. The principal machinery employed consists of a cylindrical press, the cylinder of which is of iron or other suitable metal, and is so mounted on a bed or framework as to be capable of adjustment to any inclination from a horizontal to a perpendicular position, or being set at any angle. The cylinder is open at one end and receives a closely fitting plunger or propeller. A moveable head piece is attached at the other end, open in the centre and grooved crosswise on the face for the reception of movable plates or dies of steel, brass, or other suitable metal or materials, such plates having orifices of circular, square, triangular, or other shape or form and size adapted to produce the rod or candle required as the paste or material of which they are made is expelled through the die or orifice. The cylinder of the press has, if desired, an opening at the top or upper part, securable by a close fitting door or plug, hinged, bolted, or otherwise fastened, so that the cylinder may be fed with the carbon paste through this opening, or the cylinder may be fed at the end through which the propeller enters when set to work. The propeller may be driven in the cylinder by means of a screw or rod, worked either by manual labour, steam, hydraulic pressure, or other power, so as to drive the carbon paste through the orifice in use. The carbon pencil as it emerges and travels away is received on a tray of wood, zinc, or other suitable material, grooved by preference with a V-groove to guide the article formed as it emerges from the orifice and keep it straight. The tray is set at the same inclination as the cylinder or thereabout, and as may be found most convenient for the size of the candle being produced. There is also a support upon the tray to sustain the iron or other wire on which the carbon candle is to be formed. The paste used consists of finely pulverised carbon, moistened by an admixture of molasses or oil to the required consistency, or the paste now in use may be employed.

The mode of introducing the metal wire (soft iron wire is preferred) is very simple. The propeller having been drawn back or out of the cylinder, and the latter charged with paste of the required consistency, the end of the propeller is introduced into the cylinder and the wire is inserted through the centre of the orifice or moulding die in the cross-plate already described, and pushed through the paste in the cylinder until it reaches the end of the propeller, which is then put in motion, when the wire in the cylinder will travel through and out with the paste, forming a wired carbon of the required length, whereupon it will be severed and removed, and the process of introducing fresh wire to touch the propeller and be expelled as before will be repeated as long as sufficient paste remains in the cylinder to make a carbon rod of the required length. Afterwards the process of withdrawing the propeller, re-charging the cylinder, and proceeding as before will be repeated. When wire too thin to bear expulsion by the action of the propeller without injuriously bending is required, the wire is held in position by tension and the paste forced in around it. Hollow and cylindrical carbons are produced in the same way, except that the hollow is preserved by a rod of the requisite diameter and length, which is withdrawn from the carbon when it is delivered from the press. The hollow carbons are when required to produce different lights filled with colour-giving chemicals. Carbons with wires or rods on or embedded in the surface are made in the same manner as those already described, except that the wires are put in after the carbons are moulded; there are projections or groove cutters at the sides of the die or orifice by which grooves are ploughed in the surface of the carbon as it emerges from the cylinder. Into these grooves the wires are laid and smoothed over by gentle pressure with a trowel-shaped instrument whilst the carbons are humid, in order to embed the wires more firmly. Carbon plates with metallic sheets or wires inserted are made by rolling heavily carbon paste into sheets of any given size, but half the required thickness, and after placing between two of these sheets the metallic addition in the required position the plate is solidified by re-rolling heavily. The carbons are finished in the usual way.

Hampstead, Jan. 26. ELECTRIC CANDLE.

GRAVITATION SYSTEM OF TRANSIT.

SIR,—This subject having frequently furnished matter for my correspondence in the Journal, permit me to state that there exist ample proof in the archives accessible to the public that gravitation on a large scale has been essayed in this country as well as on the Continent in the conveyance of coal and other minerals; but by reason of accumulative velocity on steep descents, defying all action of the brake inseparable from surface railways, the result has been most disastrous—destruction of wagons dashed to pieces, a consummate "cataclysme." In the language of an eminent American authority—"If anything defeat the desired result of gravitation transit it will be the dangerous velocity necessary for the full development of undulating power. It rests to find a safe and effective medium for its operation." With my system it is utterly impossible for the carriage or wagon at the greatest velocity to leave the trajectory, composed of a series of undulations, without reference to distance. For the mere transport of mineral and wood the cost of construction and the working expenses in Russia and Sweden are purely nominal. Regardless of obstacles, the very name of which has been expunged from my vocabulary, though my design was never nipped in its infancy by the contemplation of those apparent difficulties which often turn away the current of enterprise, and though the rapidity of my progress has sometimes been arrested by a more formidable barrier, I never entertained a doubt of cutting my way through it. I have had little idea of gradation, perceiving no interval between the first step and the last, but pursued my object with the impetus of a mountain cataract, fully assurred of ultimate success, based upon an innate conviction that any attempt to discover movements, forces, and causes ought to lead up towards the great first cause, whose mind and will contrived, if I may so express myself, and made the natural engine of the Universe, gravitation. His will is a vital current, moved by a living force, and fed from a living spring, with which if man's will collide the only possible result is his overthrow in sorrow, pain, and shame. Such must inevitably be the term of a system prosecuted, if not originally founded, upon the thirst after the acquisition of gain with electric-current like speed in the present generation—the age of materialism; in very truth, the era surpassing all others in idolatry of self sufficiency and inflated superficialism. Every fact and fingerpost on every path tried aim in a greater or lesser degree at precited central truth as a compass aims at the pole. Attention has been culpably diverted from the immense power placed within our reach by Nature—gravitation. Take a retrospective view of the railway epoch, and you will not have much difficulty in discovering a system of gambling unexampled in any age or clime. The reasoning faculties alike with the digestive organs become disorganised through repletion. The most distinguished member the late President of the Institution of Civil Engineers, the highest railway authority in this country, stated in his inaugural address—"Our present knowledge compared to what is unknown in physics is infinitesimal. Greater works than any yet achieved remain to be accomplished."

Little Tower-street, Feb. 3. W. JOSEPH THOMPSON.

NEW HAND-POWER ROCK-DRILLING MACHINE.

SIR,—I have read with great interest in your Journal about the hand-power rock-drill which has been introduced into your country by Mr. Meihé, one of my countrymen, and I do not doubt that it can be sometimes useful where the cost of coal is large, and also where there is not much money in hand to buy a great steam-machine, which is necessary to work the likewise costly air compressor and rock-drills of the ordinary type; but I do not think that perfection has been arrived at in the hand-power rock-drill in question, and I do not think it surprising that there should be some shortcomings in the first introduced machine of a certain class. Nor do I say conclusively that the machine of Mr. Jacob Faber is perfect in all its parts, but I have seen it, and it is a good machine, or, what I would say, a better one than the other which I have mentioned. Mr. Faber is an engineer of this place, who is very experienced in these things, so that he ought to make a good machine.

I shall suppose that everyone will know that hand-power rock-drill so-called, and also Mr. Faber's drill invented nearly two years ago, and which was not so good a machine as to be recommendable. Mr. Faber now finds that instead of making the ends of the spindle square in section or in general prismatical they may be round, one of them being provided with a straight groove, the other with a groove running in a spiral line along the spindle, and the ratchet wheels having corresponding feathers; or the feather may be on the spindle, while the wheels are provided with grooves. Another modification consists in making the spindle of special form, the screwed part of which has either a straight or a spiral groove, being adapted to slide in the boss of the wheel, while the other end is either round with a groove or a feather, or prismatical, the said groove or feather or the edges of the prism at this end being straight, in case the groove at the opposite end is spiral, and *vice versa*. In the second improvement, the disk

on which the cam-disk acts has an inside screw thread, by which it works forward or backward on the screw thread of the driving-spindle, when it is rotated. Without any additional mechanism, this arrangement would cause an advance of the spindle, in a similar manner as in the original machine. For the purpose, however, of operating this advance in proportion only as the hole to be drilled becomes deeper, the following arrangement is used.

The wheel is, by means of a spiral spring, in such connection with a toothed sleeve, that the latter is caused to turn with the wheel, it being, however, capable of sliding upon the driving-spindle. The face of the disk is provided with teeth which correspond to those of the sleeve. During that part of the rotation of the disk during which its teeth are not in gear with those of the sleeve, it turns upon the screw threads of the driving-spindle, and thus operates the advance or feed of the spindle. But as soon and as long as the teeth are in gear a change takes place, as the sleeve turns with the ratchet wheel in proportion to the rotation of the driving-spindle. Therefore, whilst the said teeth air in gear the disk is caused to partake in the rotation of the driving-spindle, and during this period no advance takes place. Now, if the progress of the work is not proportionate to the advance or feed of the drill the disk will not reassume its lowest position, and will consequently at its next back stroke come sooner into gear with the sleeve, whereby the drill will be less advanced. The advance or feed of the driving-spindle is, therefore, regulated automatically, according to the actual progress of the work.

For the purpose of facilitating the operation of drawing back the driving-spindle when a new hole is to be commenced, or for changing the drill, the ratchet-wheel is fixed by a set-screw so as to prevent the spindle from turning, and the disk being then rotated the spindle will be screwed back. The apparatus for delivering water to the drill consists of a plunger, a valve-box, and of valves; one of which serves as delivery-valve, is fitted in the fore end of the hollow driving-spindle, and the opposite end of the spindle is provided with a stuffing-box surrounding the hollow plunger. The suction-valve is contained in the valve-box, whish is fitted to a column. During the back stroke of the driving-spindle one valve opens and admits water to the drill; during its forward stroke it closes and the other opens, whereby water is admitted through the hollow plunger into the driving-spindle. The screw of the valve-box serves for regulating the quantity of water fed to the drill, so that when the drill rises the water returns partly into the suction-pipe by passing through an opening which may be closed more or less by a screw. When beginning the drilling the driving-spindle is filled with water which is admitted through the opening closed by the screw of the valve-box. The machine, most of your practical readers will admit, is likely to prove superior to those in use, and it is, moreover, cheap and not liable to be deranged.—*Barmen, Jan.* 23. H. HOFMANN.

MINING AFFAIRS IN NOVA SCOTIA.

SIR,—The weather may not be in Nova Scotia such a never ending, all pervading subject of conversation as it is—really or reputedly—in England, yet I must just now say a few words on the time honoured topic. Usually here in Nova Scotia our winter can scarcely be said to commence until about Jan. 1. This season, however, winter has caught us nearly a month in advance of the usual time. The December just passed was one of very uncommon severity. Indeed our grey-bearded weather analysts say it has been the most severe ever known here withiu the memory of any person now living. Once, in about the very shortest day of the year, the chronometer showed a fall of 15 deg. below zero,, or fahrenheit. I may remark that I have never known it colder than this in Halifax at any time in any winter.

This premature and unwelcome visit of "Jack Frost" has, as might readily have been expected, thrown a chill over most out-door occupations. Upon none of them has this effect been more visihle than in mining operations. It is true that in deep excavations the cold can make but little or no difference in the works. And in gold mining, even at a moderate depth, the dry continuous frost of an ordinary winter is considered rather an advantage than otherwise, since it holds in check all the surface water which might otherwise flow into the mine. But, on the other hand, there is comparatively much surface work about all the gold mines of Nova Scotia, whilst a large proportion of them, although called mines, are merely surface cuttings. On these a subsidence of the atmospheric temperature to zero, or below it, may readily be imagined, whilst the earliness of the visitation was such that no person had even made his wonted preparations for it. Again, owing to the fact that the gold mines in operation had been decidedly looking up during the past summer, a good deal of prospecting was undertaken during the autumn, always the best season for such explorations. These, too, were brought to a hasty termination by the early and severe arrival of winter, to be resumed, there is every reason to believe, with more than wonted vigour during the coming spring. At least I cannot but anticipate that the current year will be characterised by mining operations more actlve than we have seen for the last few years.

There are some reasons why one might doubt the reliability of my anticipations. For instance, there was a Provincial Industrial Exhibition in this city last October. In some respects that Exhibition was a satisfactory one, especially in its fine and varied specimens of agricultural products, its cereals, root crops, fruits, and also cattle of every description, and poultry. The exhibits in all of these, whilst absolutely good, indicated a great improvement upon the articles of like character remembered from previous Exhibitions held within the past 25 years. The same may be said, in a minor degree, of the variety and quality of the articles of native manufacture exhibited. I may remark in passing that the most noteworthy of these came under the heads of iron castings, household furniture, leather and manufacture of leather, agricultural implements, and carriages, both on wheels and runners. What I have particularly to say, however, is that no stranger in passing through that Exhibition would suspect that Nova Scotia was noted for its mines and fisheries, which yet are, in point of fact, the principal sources of the surplus wealth of the country. The Exhibition under these two heads was very meagre. The reasons may be these:—It being supposed that visitors to the Exhibition would be almost exclusively Nova Scotians and residents of the immediately adjacent provinces, it might be further supposed that they required no proof of the animal and piscine wealth of the country; it was to be taken for granted; while the progress of its development did not bring forward illustration of competitive modes of industry, such as excited interest in exhibits of the classes named above. Then the expense of moving from a distance such heavy substances as really showy specimens of metalliferous ore and columns of coal, and the risk in transporting gold and auriferous quartz, that always has a tendency to leakiness, might have been supposed to overbalance all the direct advantage which any exhibitor could derive from the set prizes awarded him.

It is true that individual men, as such, could have but little interest in bringing together a number of exhibits under the two last named heads. The articles so to be produced were not of a character to enter into competition with each other. But the visitors of the Exhibition in question were not all Nova Scotians, nor even all Canadians. Those of them who were neither the one or the other should have had placed before them in this Exhibition the best available materials for enabling them to form a due estimate of those great industrial resources of the country. To secure this object should have been the work of the Nova Scotian Provincial Administration, to which the mines and fisheries are the principal source of revenue, both direct and indirect. I am no friend of, or advocate for, parental government, but the effort which I have named was one which it was the bounden duty of the Provincial Administration to have made on the occasion referred to, as on all other like occasions. But so far as mines and minerals are concerned I am sorry to say, and it is abundantly notorious, that the local Government in question has not for some years past evinced much energy, judiciousness, or rectitude, either in developing those resources or in meekly aiding the efforts of those private individuals who have endeavoured so to do. Yet, notwithstanding the governmental stumbling block, I anticipate an active period in mining—I mean more especially in gold mining—during the coming open season.

The only noteworthy transaction in the sale of mining property of which I have to make mention is that of the Rose Lead Mine, to which, if I mistake not, I made some reference in a former letter. The only lode which has been worked upon this property proved exceedingly rich in the hands of its late holders. From the latter part of the past May until the time they sold out, about the close of autumn, the average yield of this lode was 5oz. 12 dwt. per ton of quartz, and this from a lode which, at the greatest depth reached, was 20 in. thick. The paying character of the mine may be better understood by being informed that the total yield during the period named was at the rate of over 16 dwt. 15 gr. per day for each man employed in and about the mine. The superficial extent of this property is sufficient, I would unhesitatingly say, to keep the purchasers profitably employed for years. This property was sold for the small sum of $50,000, and to a purchaser from New York. The host of the proprietors of gold mines resident here thus habitually show a disposition to sell out their mining claims for a present certainty of a not too unreasonable amount. A large proportion of the number lack the capital requisite to work their claims in the most profitable and satisfactory way; and many of them indulge in the belief—which often proves to be well founded—that they can soon find another property equally good with the one sold. These are among their reasons—or at least their self-excuses—for their readiness to sell.

Many years ago, and before the existence of gold was suspected in Nova Scotia, it was known that an ore of silver was to be found in the vicinity of Gay's River, near the confines of Halifax and Colchester counties, and about 40 miles from the City of Halifax. There specimens of ore of a rich quality were found in encouraging profusion scattered through the surface soil and drift; but, although efforts have been made by several successive proprietors, no person has ever yet succeeded in finding the lode from which such specimens came. Elsewhere throughout the Province many persons in exploring for gold have also been on the alert for argentiferous deposits, although without making any special search for them; but, so far as my positive information goes, this vigilance has not been rewarded by any "find" of silver. During this past autumn, however, some parties profess to have found rich silver ore in a region about the borders of the southern sections of King's and Annapolis counties, and about 70 miles westward of Halifax. I cannot speak from personal knowledge, or from any known and reliable authority, as to how far the somewhat elated proprietors are warranted in the high value which, as I understand, they put upon their discovery. I only know from the geological character of the locality that there is no reason why they should not find rich silver deposits there, as well as in many other parts of Nova Scotia. GNOME.

Halifax, Nova Scotia, Jan. 16.

THE NEWFOUNDLAND LAND COMPANY.

SIR,—There is a great deal of truth in the letter of your correspondent, "Traveller," but he has not given you the whole truth. The La Manche Mine did formerly pay a royalty of 5 per cent. to the Newfoundland Land Company, but like other mines it had to be closed. The lease reverted to the Newfoundland Land Company, and this mine is now the property of that company: 45,000*l.* was spent in erecting the best description of plant and machinery, and in thoroughly opening up the mine. The quality and extent of the ore has been proved beyond a doubt, and it was said to be the best that had been sent to this country, yielding 81¾ per cent. of pure lead. The cost of production and transport to Bristol was only 3*l.* 10s. per ton. The last cargo sold, I believe by Messrs. Richardson and Co. of Swansea, realised 15*l.* 10s. per ton. With such a property on their hands it would be surprising if the Newfoundland Land Company did not make a move at this time of activity in the metal market.

A railway is to be made across Newfoundland, and part of this company's land will, it is expected, be purchased for that purpose. The company has no less than 64,000 acres of land in Newfoundland. I am not surprised, therefore, to see that the shares have gone up this week. INQUIRER.

YORKE PENINSULA MINING COMPANY.

SIR,—In the *Mining Journal* of Jan. 24 I observe a letter signed "X.," purporting to be written by a shareholder of this company, in which he states that the accrued interest on the preference shares "amounts to over 40,000*l.*" Now, such accrued interest amounts to about one-half of that sum, and I beg you, therefore, to allow me space to correct so gross a mistake. The Kurilla Mine is, I think, progressing very well indeed, and promising to be a prize to us; but I also attach great prospective value to our other properties. The properties of the company (of which, however, "X." takes no notice) as I find by their last issued report are as follows:—

80 acres—The Kurilla property and mine, situated on the north-west side of Yorke Peninsula, in South Australia, with three engines, buildings, and machinery thereon. (Leasehold, 99 years.)

347 acres—The Bon Accord property and mine, adjoining the Burra Burra Mine in South Australia, with large Cornish engine, buildings, machinery, &c., thereon. (Freehold.)

336 acres—Land near to and held in connection with the Bon Accord property. (Freehold.)

763 acres—The townships of Aberdeen (about 87 acres) laid out on the Bon Accord property, with the terminus of the railway from Adelaide in the centre of them. (Freehold.)

A royalty of 1-25th part of all ore that may be raised from the Duryea property (80 acres), adjoining Kurilla on the south, and now belonging to the Ravenscliff Mining company.

2000 shares of 1*l.* each, fully paid-up, in the Ravenscliff Mining Company. A SHAREHOLDER.

CHEAP MINING SHARES—COPIAPO.

SIR,—Next to Panulcillo Copper shares, which with present prospects (see my letter in last Saturday's *Mining Journal*) are still very cheap at a little over 6*l.* each, and likely to go much higher soon, I know of no other copper shares that deserve the attention of investors and speculators better than those of the Copiapo Mining Company (Limited). This is an old Chilian undertaking, prudently managed, and constituting without doubt one of the finest mining properties in the world. The shares are of 20*l.* each, with 17*l.* paid up, and about 9600 of them have been issued, making the paid-up capital 163,200*l.* Before the depression in metals the Copiapo Company was exceedingly prosperous, and dividends amounting to nearly 8*l.* per share have been distributed, the last dividend having been paid as recently as 1877. When copper fell very low the directors wisely followed a policy of restriction. Hardly any ore was extracted at all, and an available balance of several thousand pounds, of which 2500*l.* even now remains unexpended, was profitably employed in opening up the mines in every direction. Reserves rapidly accumulated, and many thousands of tons of the richest copper ore imaginable, some of 40 per cent., and all averaging 22 per cent., are now merely waiting to be extracted. As soon as copper rose active operations for raising were at once resumed, and it is now intended to raise not less than 500 tons a month. At that rate the reserves are sure to last for a considerable lapse of time, and, according to trustworthy information, the supply is practically inexhaustible. Supposing the company's profits to be only 5*l.* per ton—they are actually much more with present copper prices—500 tons a month would constitute a net gain per annum of 30,000*l.*, and as the company has no debts, and as the London expenses only amount to about 500*l.* per annum, nearly the whole of that sum would be available for immediate dividends, at the rate of (say) 18 per cent. per annum on the paid-up capital, subject to increase should copper go higher, as is almost inevitable. The halvans at the surface, containing a large percentage of copper, which could not be utilised until now, are likewise to be turned at once to profitable account. Altogether, therefore, the above estimate is very moderate, and likely to be much exceeded, but, at any rate, it may be safely relied upon as a minimum.

Next to these valuable mines the company possesses large estates—one in the richest part of the Copiapo Valley, the other on the coast. These estates have yielded large profits in the years of prosperity when produce was high, and as much as 5000*l.* in one single year has been derived from them. Even last year, with war and the fearful depression in trade, the profit made in the farming department was still nearly 1000*l.*, and it is certain that this will be considerably exceeded in 1880, since everything in the produce market has moved up in the last months. Altogether I believe the company's profits this year will be nearer to 40,000*l.* than to 30,000*l.*—that is to say, nearer to 25 per cent. than to 18 per cent. on the paid-up capital.

It is a perfect wonder to me that shares in an undertaking with such splendid prospects can be still bought some 5*l.* under par. It must be plain to anybody in his senses that they are worth considerably more, and should be quoted at a high premium instead of at such a ridiculous discount: 24*l.* per share would not be an exaggerated price at all, and I fully expect to see Copiapo's at that figure before 1880 is out. I have taken the trouble to ascertain facts and figures at the company's office before writing this letter, and I can consequently vouch for their absolute correctness.

Jan. 28. A PERMANENT SHAREHOLDER.

THORNHILL REEF GOLD MINE

SIR,—Can any of your readers say what has become of this property? I contributed to the preference capital when it was raised on the understanding, and as set forth in the circular, that if sufficient was not contributed the deposit, on application, would be returned Perhaps some others took shares on the same ground; if so, surely the directors can be compelled to return the money. Whether the mine be in liquidation or not it would be dishonourable to confiscate any money raised under such circumstances. The ordinary share capital I treat as lost, and should the preference if I had taken it up without a stipulation. I simply hold a receipt for the preference shares, no certificate, which prompts me to believe the money was not raised, and can sue the directors.

A SHAREHOLDER.

COPPER MINES AT THE CAPE.

SIR,—I notice some discussion in the Journal concerning these mines. It is true but little is heard about the property. It does not require "bolstering up," like the vast majority of English copper mines. Probably the best mines are those of which you hear very little. Nevertheless the Cape mines do produce as much copper as the whole of the British mines together, and of a percentage which if found in Cornwall would send half the population of that county crazy, including not a few "London mining people."

I think it not unlikely that at no distant date, judging from the recent discoveries made, a good deal more will be heard about the vast deposits brought to light there, and I am very much mistaken if any copper mines in the world have such a future before them.

I notice that notwithstanding the opposition on the part of the smelters to the purchase of the Briton Ferry Works at Swansea, one of these smelters holds 511 shares in the company—a sufficient commentary on his opinion of the property. A CAPE MERCHANT.

London, Feb. 3.

There must be something after all in Ookiep, a mine which can at the present price of 15s. the unit, and without an effort towards increased production, earn for its shareholders some 140,000*l.* to 150,000*l.*, which it most certainly can do supposing the price of 75*l.* for copper the average of the year.

SOUTH AUSTRALIA.

SIR,—The mail to-day has brought me a note from a very intelligent correspondent of mine, in which he gives such a pleasing account of the harvest and condition of South Australia that I am induced to transcribe it, in case you may be able to find a corner for it:—

South Australia, Dec. 25, 1879.

My dear Sir,—The compliments of the season to you. This wish can only affect you mentally, however; for by the time you receive this the season will have passed, and to a great extent have been forgotten. If you have never been in our sunny land (I do not know whether you have), I would like you to enjoy such a day as this is with us. It is 10·45 a.m. The sun is shining brightly and warm, but occasionally intercepted by very light clouds. The air, too, is warm; but this is relieved by a gentle south by west wind. The atmosphere is dry and delicious to inhale. The mercury here (a tolerably cool room) is at 73°; in the sun and wind, 78°; in the wind and shade, 76°; in the sun and out of the wind, 84° 30′. I doubt if Englishmen in any part of the world to-day enjoy finer weather. It would be interesting to know how you in England fare to-day in this respect—perhaps frost and snow, or rain, hail, or sleet, or high cold winds, any of which would scare a South Australian of ten years' residence Excessive cold we simply cannot endure, nor are we prepared for it—our clothing being light and thin; and excessive heat is almost worse still—I do not think we can stand it as well as new-comers can and do.

Notwithstanding the depression in mining, I daresay that this is the most prosperous Christmas ever enjoyed by South Australians. The harvest is almost everywhere beyond expectation. It would seem that we are reaping—in round numbers—about half a million tons of grain, or 18,500,000 bushels. Of this we shall have about 400,000 to export, or over 1000 tons a day, for the next year. Freights are looking high—3*l.* to 3*l.* 5s. and 3*l.* 10s. to England. The present rate to the grower may be taken at 5s. per bushel, or (say) over home consumption, 3,700,000*l.*

We have still the bulk of the land of the colony to settle, and the great production of grain this year, along with an easier money market, will make it be taken up for cultivation at a rate never before witnessed here. I regret to say, however, that we are not making water storage and planting forest trees as fast as we ought to be doing. The "habitacle" of the worm-destroying birds is being destroyed by the farmers, and open waters are greedily used up—each person trying to get the greatest advantage by it as long as it lasts. . . . While South Australia, as a whole, is in the enjoyment of such great blessings, this immediate locality (Wallaroo district) is in anything but a flourishing condition. Four years ago not less than 12,000*l.* per month must have been paid away by our mines, of which more than two-thirds have ceased to be distributed in the locality—the Wallaroo and the Kurilla Mines spending what is now expended between them. As a consequence, men have had to move away in search of work, some leaving their families, and others moving "bag and baggage." Some have found remunerative employment, some have not. Some have made a judicious use of their earnings, and others, away from the restraints of home, have spent theirs in drink. We have at present a large amount of poverty and distress here in consequence. One good thing, however, is that all children, however poor, can get a good education at our Government schools—if they cannot pay they can go free; so that poverty is no hindrance in the way of their obtaining that great benefit."

Feb. 5. A CONSTANT READER

CWM ERFIN MINE, CARDIGANSHIRE

SIR,—What seems a mystery to every one acquainted with mining in this district is that this mine should have been allowed to remain unworked for more than four years, being situated in the midst and in the very heart of the best mines ever worked in this county, and having yielded during the last few years of its working 173,000*l.* worth of silver-lead ore, which at the present price would be worth 18*l.* 10s. per ton, and which gave in the last 10 years of its working between 30,000*l.* and 40,000*l.* in dividends. I will, with your permission, put a few facts before your readers. Cwm Erfin is in the direct centre between Old Groginan and East Darren, two mines which have produced more silver-lead ore than all the other silver-lead mines in the county. Goginan is 40 fms. deeper than Cwm Erfin, and has been worked under the bottom level on tribute as far as they could go and draw the water and ore. East Darren is 60 fms. under Cwm Erfin, with good ore found in the bottom level. Again, South Darren is from 200 to 300 fms. to the north of Cwm Erfin, and is 50 fms. deeper, the best course of ore being in the bottom level. The ore in Cwm Erfin, owing to some misunderstanding between the late workers and the owner of the ground, was systematically extracted, but notwithstanding that the mine continued to give good returns and dividends to the last day of its being worked, and I am prepared to show by the plans of the mine, filled into date of suspending operations, that the 45 and 60 fm. levels were left in the vety heart of the ore worked over them in the more shallow levels. The engine-shaft has been sunk 9 fms. under the 60, and is in a good ore lode. Owing to the misunderstanding before referred to the machinery was purchased by the landowner, and amongst the lot included six new 26 in. roller shells, besides several new shells of a less diameter. May I ask you, Mr. Editor, does this look as if the late company contemplated that they had exhausted and worked away all the ore? The same plant is now on the mine that kept the water and enabled the mine to be sunk to the 69, and returned—*i.e.*, drew from the mine—crushed and dressed on many occasions as much as 100 tons per month. It is now out of condition to some extent, but a sum expended of less than 4000*l.* in 12 months would make Cwm Erfin as rich a mine as it ever was.

I hope to have the pleasure of seeing some one to look at the mine and examine the plant; if they do I would show them another mine, not a mile from where I am writing, with a full field of all kinds of

machinery, that with an outlay in working of 2000*l.*, by opening on the Goginan lode, would prove a richer mine than the old Goginan ever was.—*Aberystwith, Jan.* 27. ABSALOM FRANCIS.

P.S.—Both these mines can be obtained at 1-16th the royalty, with leases for 21 years.

SUCCESSFUL MINING—WHEAL JEWELL.

SIR,—This mine is situated between the once old and celebrated Wheal Fortune, in the parish of Ludgvan in Cornwall, and about 2 miles north-east of Marazion; and about 1 mile south of this sett, or setts (as there are many lords), is the celebrated Old Wheal Neptune, which was discovered by James and William Gundry, of Goldsithney. Wheal Fortune was the property of John Gundry principally, who held 62 64th shares, and returned for several years about 600 tons of copper ores bi-monthly. The writer of this communication when a little boy was present at a dinner held on the mine to celebrate a sale of 600 tons of copper ore for the two months, which fetched 37*l.* 18s. 6d. per ton. A sample of the ore is now before the writer! The outlay in Wheal Neptune was 5*l.* per share, and paid at one period 100*l.* bi-monthly per share, and twice a year divided the surplus. Wheal Jewell proper was suspended about the year 1780, and worked to the depth of about 50 fms. under the adit or day level, 14 fms. from surface; the ore was considered, with one exception, the richest yellow copper ore in the county of Cornwall. The first 60-in. cylinder engine ever erected in Cornwall was made by Boulton and Watt, of Glasgow, and put up on the mine by Mr. Murdock, their chief engineer at that time. Why the mine stopped? The Godolphin Mine, some 3 miles to the east, was discovered close to the surface fabulously rich, and the adventurers offered a large premium for this engine, as they could not get one made in less than two years. Wheal Jewell is an extensive mine, and contains many parallel lodes of the greatest promise. A CORRESPONDENT.

LEAD MINES.

SIR,—What a furore there has been since this year came in after tin and copper mines. In writing to your columns in the latter part of last year I anticipated there would be a considerable advance in the price of shares all round, but the excitement and the rush for tin and copper have been much beyond what I calculated on, and looking at the reports of the markets this morning I find the excitement has been rather of that character which may come under different names, but which I will content myself by defining as not altogether in accordance with the demand for those minerals. The rush up has been greater than the demand for the material merited, and the consequence will be a considerable decline in this class of security when the relapse which invariably follows a rapid rise takes place.

While all this rage has been going on for tin and copper shares that other important section of our mineral wealth (lead) has fallen into the background. Although lead mines have been many and many a time referred to as the steadiest and safest investments in the mining world, yet there are times when this class of security, like all others, sinks into the shade. So it is now. The great anxiety displayed to become possessed of copper and tin shares, and the impetus given to the transactions in those shares, have caused the steady going lead mines to be comparatively neglected, and the shares in many of them at the present time are selling at much below what they really ought to be.

Referring by way of comparison to two of the mines which are now before the public—Prince of Wales (copper), and Aberllyn (lead)—while the first is at an advanced premium on what I consider a mere hypothesis of what it may become, the latter is just sustaining its position or its value (so far as the market value is concerned) by its own intrinsic worth. We find by the reports it has already developed into a paying mine, with a prospect of being in a very short time further in the Dividend List, and yet, although each week gives us some additional proof of its present and prospective value, it is in a measure lost to view in the rage now going on for tin and copper mines. There is another lead mine in the Isle of Man—Glenroy—which, although it has been disappointing so far, is now opening out in such a manner and displaying such promising indications that there is every likelihood of its becoming one of the prizes of the current year. It is well worth the attention of everyone desirous of making money, and while shares are to be had at the present price they should be secured, as it must sooner or later turn out a most valuable property.—*Feb.* 4. OBSERVER.

STOCKING OF TIN.

SIR,—There are many persons who question the propriety of reserving tin from the market when prices are low. They say—"The safest course is to take 'times prices,' and that it is dangerous to hold it, as prices may never get up again." The managers of several mines have, however, judged otherwise—those of Dolcoath, Wheal Jane, Wheal Owles, and some others, having kept tin in stock for years—in fact, during the whole period of the late awful depression. Now that the standard has gone up those managers will have the credit of having shown a prescience, so to speak, which justified their measures, for tin is now higher than it was when their stocking commenced. In the case of Wheal Owles I think the stock consisted of 400 tons, some of which has been lately sold at about 65*l.* per ton, so that the company will gain by the stocking after paying interest and commission to bankers. The same may be said of the other mines where the tin was withheld from the smelters. Some of your readers will, doubtless, remember that Mr. R. Boyns, the purser of Wheal Owles, about six or more years ago, netted 6000*l.* or thereabout, by retaining a large quantity of tin at the mine for several months, and selling it at largely enhanced prices. He is evidently, like Capt. Teague, a far seeing man. Where credit cannot be had at bankers tin producers are, of course, obliged to realise upon their produce by selling at "times prices." R. SYMONS.

Truro, Feb. 4.

EAST ROMAN GRAVELS LEAD MINING COMPANY.

SIR,—Some few months ago you kindly inserted a letter from me calling attention to this company. With your kind permission I will now observe that the mine lies to the east of, and takes its name from, the celebrated Roman Gravels Mine. The lodes run through from one mine to the other, and the setts are only divided by the usual surface boundary, which, of course, underground is imaginary. The shaft is down to the 96 below adit, which is about the depth the aforesaid Roman Gravels Mine became so wondrously rich. At the 60, 72, 86, and 96 the ends are now reaching the rich runs of ore, and there is at present between 2000*l* and 3000*l.* cash in hand, or payable on the calls. The mine, moreover, has its shafts sunk to deep levels, and is well provided with engines, machinery, dressing-floors, &c. The returns of ore are from 25 to 30 tons monthly. This, I am told on good authority, covers the whole of the expenses of the mine and of the London office within a few pounds. The only things which are to be regretted are—First, that boring machinery has not been adopted, by which the development might have been increased at least tenfold, with a great saving in expense; and, secondly, that when reconstructed some modification of its former title of the West Tankerville Mining Company was not adopted, as under that name the mine was then known in the market, and shares readily saleable, instead of the present name, although I must grant it is a more correct title to give to the sett. A SHAREHOLDER.

TOLLDISH MINE.

SIR,—Amongst all the mines—numerous as they are—about to be set to work none, perhaps, are more deserving of the attention of investors than Tolldish Mine, in St. Columb. It is situated a little to the east of the Park of Mines, and having the same productive lodes. The lessee of Tolldish has preemption of a grant of the land up to the boundary of those mines, and near to their workings. In three years the Park of Mines yielded 30,000*l.* worth of tin, which was reduced from the stone by a stamps of six heads only. The evidence of the work of the "old men" in Tolldish exists in deep open excavations. They had also two adits—one only 5 fms. deep, and the other 9 fms. More recently an adit, to cut the main lodes at 20 fms. deep, was taken up about half-a-mile from the mine, and the end is now within about 50 fms. of it. The extension of this adit that distance would unwater several tin lodes of good produce. There are six lodes known in the sett, which was granted by Mr. Willyams, of Carnanton, a few years ago, on reasonable conditions. A large heap of tinstone ready for the stamps now lies at the surface. An old man, over 60 years of age, and a boy bruised down by hand, with a hammer, in nine months and returned more then a ton of tin; and the leavings, which I had "vanned," show that by a further dressing tin in paying quantity can be taken out of it. The Cornwall Minerals Railway passes through the sett, so that carriage of goods to and from the mine, between Par and Newquay, is very cheap. This mine deserves the attention of investors who desire to operate on a tin mine where no risk is involved, for I look upon Tolldish as being free from the speculative element. R. SYMONS.

Truro, Feb. 4.

CORNISH MINING—THE GWENNAP DISTRICT.

SIR,—At the foot of and around the granite upheave of Carn Marth may be said to include all the mineral ground of the Gwennap district, known to have produced greater revenue than the same area in any other part of the United Kingdom. It stood pre-eminent for a number of years, and the inference is there are as good mines to be discovered in its unwrought ground as those which produced mineral to the value of millions. The lodes of Wheal Buller, Wheal Basset, West Basset, South Frances, and other important mines, skirt this granite hill; superficial trials only have been made, discovering the outcrop of lodes, giving evidence of great deposits of mineral at a reasonable depth. Some slight idea may be formed of the mineral wealth of the district by stating in the one year June, 1842, to June, 1843, copper ores (to say nothing of tin) were sold from the mines around this hill amounting to 233,627*l.* I notice, by the indefatigable exertions of Capt. W. Tregay, operations have been commenced on the Wheal Buller lode, at East Wheal Buller, and a large lode discovered, producing gossan of the finest description; indeed, I have never known such lode fail turning out large quantities of copper These same lodes, after passing through this virgin ground, go into the Great Consols and United Mines, and are the same which produced such enormous profits in those mines. I consider this a good opportunity for the investor. In this same district is Wheal Comford and North Tresavean, which I have strenuously advocated as a desireable investment. The recent rise in the market price of the shares is confirmatory evidence that my opinion (founded on long practical experience) is not wide of the mark. There are other mining properties in the same district about to be started requiring but little money to open up, I believe, as great and lasting mines as those which founded the merchant princes of the county. CHAS. BAWDEN.

St. Day, Scorrier, Cornwall, Feb. 4.

PARYS MOUNTAIN—ROCK DRILLS.

SIR,—Geology indicates that the recent discovery at Parys Mountain is a valuable one, and that at some remote epoch the mass of copper in the mountain has been forced when in a state of fusion into its sides. Anglesea—the Mona of the ancients—was in the time of the Romans celebrated for its copper. Probably the Parys Company might find it advantageous to follow the recent branch by means of rock-boring machinery into the mountain, and thereby at a very early date, and while copper is at a good price, reach a huge deposit of probably pure copper. Miners working as at present with ordinary picks and other mining tools make slow progress towards reaching the prize.—*Jan.* 31. A SMALL SHAREHOLDER.

SOUTH PENSTRUTHAL.

SIR,—I am pleased to see this company have allotted all the shares, and wish it every success. It has often been a matter of surprise that the former company (now in liquidation), who had this sett in conjunction with North Penstruthal, did not work the south mine, or that they did not some years back form a new company for working it. It seems evident to all who know anything of the property that soon after the engine is erected and the pitwork put in it will become again, as in former times, one of the greatest mines in the district. I see the Cornish papers note a considerable improvement in Wheal Comford and North Tresavean, whose sett adjoins South Penstruthal to the south-east, to which Capt. Josiah James attaches very great importance. The lode in the adit being 6 ft. wide, worth 40*l.* per fathom. With the present price of tin it is thought that mine is in a position to pay costs, and on re-working the copper lode to make a monthly profit. Both South Penstruthal and North Penstruthal may be congratulated in having two of the most promising mines in the whole district of Gwennap. The adventurers in these companies are, I believe, those shareholders in the late Penstruthal Consols Company who took advantage of the option given them to join the new companies, and there seems little doubt but that they will before long make up any loss they may have made in the past. They are much indebted to Mr. Waddington, who has taken the leading part in getting both companies established, assisted by Mr. Ashmead in the executive. ADVENTURER.

Jan. 30.

WHEAL JANE.

SIR,—Now that tin mines seem to be all the rage, and their value increasing almost daily, it may not be out of place to draw attention to one which appears to have been completely overlooked by the investing public—I refer to Wheal Jane, in the parish of Kea, in 2048 shares, selling at about 4*l.* a share, or 8000*l.* for the property. This is no new concern; it has been worked throughout the great depression and low prices of the past few years, previous to which it paid good dividends, and is now on the high road to increased prosperity, having successfully weathered the storm. At their last meeting, held Sept. 30, a profit was shown of 356*l.* on the four months' working. Tin sold realised 2446*l.* Total costs 2090*l.* Debt to bankers reduced to 2316*l.*, against which there was tin in stock valued at 3765*l.*; this if still unsold represents a far greater value now. Owing to the increased expenditure consequent on the erection of additional machinery and a complete alteration of their mode of dressing, which will effect an immense saving, it may be necessary to make a small call at the forthcoming meeting on Friday, the 6th inst. After which, founded on the merits of the mine alone, shares appear certain to have a marked advance in price, and a week hence may probably see them at 10*l.* each, instead of the present absurd quotation, at which price they would be still very cheap, as that would represent but 20,000*l.* for the entire property. Investors have here an opportunity seldom met with of securing an interest in a good genuine concern at a price representing little more than the value of the plant and machinery.—*Feb.* 3. H. C. S.

THE GRIFFIN MINE.

SIR,—"R. C. G." is, I suppose, interested to some extent in this mine; if so, let him follow my example, and "go and see for himself." I have recently spent a day or two examining this and some of the adjoining mines, and will gladly give him the result of my observations and enquiries. I was conducted by the captain over all the workings (in which men were then busy), and saw sufficient to satisfy me of its present producing power and future prospects, and can at least assure "R. C. G." as to the stopes now in hand, from which in the adit, the 10 fm. level, and the 15 fm. level I brought away samples which I took for myself. I cannot give him much information as to dressing operations, for the frost was so severe that all such operations were of necessity suspended, but I saw the dressing-floors and various heaps of ore more or less dressed or selected, and some cleaned ore in the lead house, and was informed that a parcel would be sampled for sale on the 14th inst. if the frost would break for a few days, and that future monthly ore sales would be continuous.

There is certainly ample power at surface. A good engine, pumping and winding gear, and stonebreaker, all in capital order, and working well. The stones of lead I saw there were richer than any others I saw at the neighbouring mines. I feel sure that if the mine is not a great success it will be the result of mismanagement. I think the directors have spent too much in proving the mine and making certain what they have in reserve, instead of having completed the dressing apparatus earlier, and put out, sampled, and sold many tons of ore before this

I believe the first sale of ore was made some months since—about 14 tons—and was obtained from the driving of levels only, and that no lead from stopes has yet been sold. "R. C. G." may rest assured that regular sales are now promised, and it may reasonably be expected that over 100 tons will be sold in the next six months.

Feb. 4. A LARGE SHAREHOLDER

EAST PEEVOR MINE.

SIR,—From the description of this mine in a recent number of the *Mining Journal* anyone might be led to suppose that it had some connection with Wheal Peevor. The object of this communication is to correct any such false ideas. It no doubt suits the promoters to call this mine after one that has made a name for itself. But it must not be supposed that the lodes of Wheal Peevor run into the ground in question, which was, I believe, partially worked a few years since under the name of Wheal Briton, and is near the village of Blackwater, in the parish of St. Agnes, about two miles distant from the nearest point of what may be fairly called the Peevor district. There are several mines much nearer Wheal Briton than Wheal Peevor. Why not call it after one of them? A MINER.

MINING IN CARDIGANSHIRE.

SIR,—The steadily advancing prices of lead ore and blende, concurrent with the fine discoveries made through spirited and judicious working at South Darren, Frongoch, and one or two other mines in this district, is having the natural and reasonable effect of causing enquiry and drawing attention to mineral ground hitherto only partially wrought, though possessing in continuation the same veins and similar stratification as the properties above indicated. At the Lisburne Mines rich courses of ore near the surface and westward towards the boundary are being opened out, and one or two independent setts are about to take advantage of good neighbours. Further west, again, on the principal lode of the Lisburne Mines, is the fine property of Llwynmaller Mine, which I hear is not likely to remain much longer in a state of quietness so opposed to its capabilities. Then, taking Frongoch Mine and its magnificent lode, its course eastward is comparatively a blank; but a short walk from the Devil's Bridge up the pretty valley of the Monach river will enable one to note its outcrop at various points, but in the valley no systematic trials have been made except at De Broke Mine, where the lode is exceptionally fine, and where the ore deposits for such limited depth have pretty nearly come up to those of the Great Frongoch. Going northward we find Esgair-Lle, West Esgair-Lle, the Crown, the Temple, and Bwlch Gwyn in full activity—a chain of mines on one of the master lodes of the system. The Powell and Llywernog Mines, near Ponterwyd, have been virtually idle for more than a year, but are to be started again with fresh capital. There is no mine in the locality in a better position for profitable working at an early date than the Powell Mine. It is to be regretted that the finely situated setts of Level Newydd, Pencraigddu, and Caenant to the east, and adjoining the Goginan and Bwlch Mines, and on the same lode, should so long be deprived of means for spirited working that the ground so well deserves. I know of no mining site hereabout where rock-drills (machine power) could be easier applied for deep cross-cuts to unwater the engine-shafts and levels. P. J.

Devil's Bridge, Feb. 3.

THE LLANRWST DISTRICT.

SIR,—A writer in the Supplement to last week's Journal expressed his disappointment that I did not extend my remarks so as to include the Griffin Mine in my category of "the promising mines of the district." I intended to have done so, but was diverted at the time from the pursuit, and before I could conveniently return to it I found that my intention had been superseded by no less a personage than the captain of the Griffin Mine himself, who certainly ought to be regarded as a more reliable authority on the merits of that mine, both in respect of its intrinsic and prospective values, than I could reasonably hope to be, and hence I had no prudential alternative but to subside—especially was my subsidence into silence determined when I saw that he claimed relationship and identity with a lode of the district of which I entertain a very indifferent opinion. After such an occurrence it would have been egregiously obtrusive on my part—if not absurdly presumptive—to write of its merits as an enterprise, favourable or otherwise, as a member of the Llanrwst mining district proper, seeing it had voluntarily allied itself with the sub-district—D'Eresby Mountain.

My object in writing the letters referred to was to call attention to the fact that in the Llanrwst district there are mines and mines, in order to enable a discerning public to discriminate between one class and the other on the basis of their actual returns. My motive for this was that the really meritorious and occularly demonstrable properties of value which abound in the district should not be injured or prejudiced by shams and pretenders.

My statement in a former letter that the Llanrwst lode was the principal lead ore producing lode of the district was true at the time and is true still—not intended to rest upon its past prolific yield, but to be determined by its future productiveness as well. The *ipse dixit* of Capt. A. Waters, of the Roman Gravels Mine, Tankerville, &c., who, it appears, has had the temerity to indirectly contradict that statement, I shall probably have an opportunity of refuting in an indisputable manner on some future occasion. My motto on this, as on all other similar circumstances, is that "Facts are stubborn things," and on these alone will I rely in this instance. It is my purpose and intention to watch the issue of these conflicting statements, and recall attention to them when practical results shall have demonstrated beyond the possibility of dispute or cavil successfully which was right and which was wrong. The Llanrwst Mine, which is locally unquestionably acknowledged and admitted to be the Pole Star mine of the district, is again—consequent on the recent advance in the price of lead—in active operation, which, with two others of the leading mines enumerated in my category, and briefly discanted on a short time since, will go on to prove or disprove—prove, I affirm—the statements I have made and the position I have assumed respecting them.

The Coed Mawr Pool Mine—one of the four principal mines of the district according to my knowledge, judgment, and selection—continues, I regret to say, to drag its slow length along, in consequence I am told of some reluctance on the part of the lords'—or rather ladies'—agents to concede the requisite extension of ground for an extensive, economical, and successful working. It is to be regretted that those agents should betray so much shortsightedness and illiberality towards mining, but I presume it is owing in a great measure to the paucity of their experience in such matters.

VIDE ET CREDE.

MINING IN LLANARMON

SIR,—On several occasions I have called the attention of investors to this district, being confident that capital expended in the further development of the known rich lodes could not fail to be highly remunerative. They are situated about five miles south-west of the town of Mold, and four miles north-west of the Great Minera Mines; the stratification is a continuation of the carboniferous limestone from Minera, and forming westward a part of the Mold Mountain, one of the most highly mineralised mountains in Wales. It must be obvious to every practical miner that in the selection of a mineral property the bearing measures of the country should be well developed, and I am in a position to assert without fear of contradiction that they traverse these lodes most favourably, and wherever they have been opened upon the results have been unexceptionally profitable. I now have the pleasure of giving a few details of the workings on them, beginning at the southern end.

MAES-Y-PWLL.—Five shafts have been sunk on this lode, varying from 13 to 40 yards in depth, and two large runs of lead ore discovered, but the shafts are not deep enough to cut the main body. An adit level has been driven 70 yards; the lode in the end is 5 ft. wide, with a little lead and carbonate of lime in it.

CANOL.—Nothing has been done in this lode west of Bodidris, but there the old workers found several deposits of ore.

CREIGIOG.—Only two shafts have been sunk west of Bodidris on this lode to the depth of 25 yards; the lode is 3 ft. wide, with spots of ore in it.

TAN-Y-GRAIG.—Four shafts have been sunk on this lode. Pully shaft 45 yards deep, and levels extended 140 yards east. There are three sumps below this level from 5 to 8 yards deep; the lode is 5 ft. wide, containing solid lumps of ore and carbonate of lime, and from the open space in the roof of this level, being in places 30 ft. wide, it is evident immense quantities of ore must have been extracted. Footway shaft 60 yards, whim-shaft 60 yards, and engine-shaft 75 yards, but they are not deep enough to cut the runs of ore proved in the pulley shaft.

COED-DRAW.—Two shafts have been sunk on this lode to the depth of 30 yards; the lode is large, and very promising for good runs of ore in depth.

PANT-Y-GWLANOD.—A number of shafts have been sunk on this lode, the chief being the engine-shaft 140 yards deep, and flat-rod shaft 160 yards deep; at this depth a splendid run of ore was followed 120 yards east, which produced in five years 2088 tons of lead ore. There is still good ore in the end, but a new shaft should be sunk further east to cut this run at a depth of 250 yards.

GREAT NANT.—Ten main shafts have been sunk on this lode, varying in depth from 90 to 208 yards, and levels extended east and west at various depths, from which thousands of tons of lead ore have been sold. There is still splendid ore gone down in the bottom levels, and hundreds of fathoms of virgin ground above these levels not developed, in consequence of disputes with the different companies' setts on this lode, which prevented the deep level being brought up to tap the main feeders of water in the Caleb Bell cross-course, it being 900 yards short driven.

NORTH.—The deep adit level has been driven on this lode 120 yards, passing over a good run of ore gone down, and the forebreast is within 60 yards of cutting another run of ore followed down a short distance from surface.

BOG OBLIQUE.—Two shafts have been sunk on this lode, and good ore proved. From the foregoing, which embraces an area of two square miles, it will be seen that by driving the deep adit up to the main feeders of water and cross-cutting north and south to the lodes they can be developed to a great depth below the adit levels. In conclusion, I would urge capitalists and investors to visit this district, as seldom an opportunity like the present occurs for making large fortunes, and I shall be glad to render them all the assistance necessary for a thorough inspection of the workings, plans, and sections.

JOHN L. M. FRASER, Consulting Mining Engineer.

Greenfield House, Wrexham.

MINING IN LLANARMON.

SIR,—I have information this week from a most reliable quarter that lead mining in this district is being pushed forward with considerable vigour at many points, and the most cheering results are confidently assured. The amalgamation scheme propounded by your correspondent, "Enquirer," I am told, is being well considered by a party likely to carry it through, and if so we may soon expect to see the "Westminster boundary" brought to the fore as one of the largest concerns in Wales. Reports of a very reliable character as to the value of this area may be obtained from parties whose mining knowledge is of the first order. Amongst the properties in the Westminster group the Lady Ann Mines are likely to take a leading position, as the following report will indicate It is from a practical miner, who has been engaged in lead mining all his life:—He says—"Lady Ann Mines. I have been down in Francis shaft to-day. The lode is 4 ft. wide, containing a rib of spar on the heading about 5 in. wide, and another rib in the middle of the lode the same thickness; and one on the hanging side of very fine spar, about 4 or 5 in. wide, with a sticking of clay on the side, strongly indicating lead. I think you will have a change for the better soon. The men have cut a lump of ore, and the sinking looks well." The latest report on this promising lode is that "We have just got into the junction of the Westminster lode, and the shaft is now down 28 yards. I like the appearance altogether very much indeed, and I think you stand a good chance of finding ore close to us. I am glad to see a sticking of clay (at this point of the junction) in it, mixed with spar, and I think the probability is you will soon see something to cheer you."

The works at the Nant Adda Day level are of considerable importance, and ought to be vigorously pursued, and the discoveries at Brynymwyn and Pant-y-gulanod Mines are most valuable. These, together with the Lady Ann Mines, in one line cannot help becoming in the future, if carefully and systematically worked, points of great value in this district. RESURGO.

THE ROCHE FELSPAR COMPANY (LIMITED).

SIR,—I write and regret to do so that this most valuable property should be managed so badly. Did I say badly? This is not strong language enough I think.

I intend saying a great deal about it, and will send you copy of what will be sent to the shareholders. We shall never get on better till the management is changed. How can it, when I am informed the manager at the works has stayed away from the works near a week at a time. Should this be true, I do not wonder the balance-sheet is the wrong side. —— A SHAREHOLDER.

BALLYMENA AND LARNE RAILWAY.

SIR,—In these days of extensive investment in railway shares it seems surprising that a compact little Irish railway of specially narrow gauge, between Ballymena and Larne, should attract so little public attention that its fully paid-up 10*l.* shares can just now be purchased for about 7*l.* Perhaps "Irish depression" is the cause. This railway, of no great length, cost little in construction, owing to the cheap and flat nature of the country it traverses, and the energy of Mr. Chaine, M.P., and Mr. Lewis, its engineer. Although but recently opened, I understand its earnings have been so good that the shareholders have already received 2½ per cent. upon the first half-year's earnings (an unusual occurrence in the history of railways), and that another 2½ per cent. has already been earned. I have travelled over this railway, and its tiny trucks, carriages, and engines, and its specially narrow gauge (2½ feet I think) compare favourably with more expensive but broader gauge railways.

Feb. 2. A TRAVELLER ON THE BALLYMENA AND LARNE RAILWAY.

Meetings of Public Companies.

ST. PATRICK LEAD MINING COMPANY.

A meeting of shareholders was held at the company's offices, Coleman-street, on Monday,

Mr. ALFRED THOMAS in the chair.

The SECRETARY read the notice convening the meeting, and the agent's report, together with a special report of Capt. H. B. Vercoe, were submitted.

Jan. 29.—Perhaps it may not be out of place to bring once more before your special notice the position which the Saint Patrick Mine occupies with regard to the surrounding mines of present and past notoriety. It adjoins, in the first place, the present rich Prince Patrick property to the west, and is in the more productive measures of the two, in the same stratification (the carboniferous limestone), whilst on the north, in the same measures also, it adjoins the once rich Williamson's or Parry's Mine, and the old Pen-yr-henblas, which was also very rich; and to the south it adjoins the famous Halkyn Mines, the Pant-y-Go portion of which in the limestone is considered the most productive ever worked in those measures in this district, and it is worthy of particular notice that the same cross-course (the Pant-y-Go) runs directly from that old deposit of ore through the St. Patrick Mine for the whole width from north to south. It is on this cross-course that the bottom level, 120 yards deep, has been driven towards the St. George's vein, one of the best ever found in the chert measures, but never prosecuted in the limestone; and as it has already been discovered to the west in the Prince Patrick property, and found very valuable there, it cannot be doubted that when intersected in this property it will open out one of the best known lodes in the locality. Having been specially engaged to inspect and report upon the Prince Patrick Mine since the workings were suspended in the Saint Patrick (adjoining), I took great care and particular notice of all their underground workings, and can speak of these matters in the fullest confidence; and, moreover, having been engaged to inspect and report on the adjoining mine, to the south of Prince Patrick, I examined a fine east and west vein, worked formerly in the latter property, and dialled the workings upon it as far eastward as the boundary of the St. Patrick Mine, and I am enabled to say that this vein will be intersected in the bottom cross-cut of this mine in about 40 fathoms more driving; and I am informed on authority that I consider reliable that a new vein was cut from these old workings with ore in it, and of great promise, close to the western boundary, and this will probably be cut in some 15 to 20 fathoms driving from the present end. You are aware that we have several other very interesting and important trials in prospective. I will at present, however, point out only a few of these. The cross-cut in the chert measures at 60 yards deep has been driven a considerable distance without cutting any veins or branches, but it is now approaching so nearly the St. George's vein that I think there is a fair probability that other veins will be found in connection with that celebrated vein, as veins in those measures invariably go in tribes of (and over) four, in close proximity; instance the Halkyn and the Milwr Mines, north and south of this property. In the 90 yards cross-cut by a little further outlay in rising on the joint already cut it is likely a good pipe of ore will be found in the black limestone, and great facilities will be given for following and working it on the incline towards the western shaft, where it was worked profitably, and left many years since on account of inconvenience in working it down after an end. In conclusion, I would say it appears to me that the most important and dependable trial, however, is the driving of the bottom 120 yards cross-cut with all speed, and I have every confidence that a quick success would result.—WILLIAM FRANCIS.

Jan. 29.—Having inspected the St. Patrick Mine yesterday I have pleasure in handing you my report thereon. The property is situated on the eastern slope of the Halkyn Mountain, which is celebrated for its rich deposits of lead ore, and is without doubt one of the best lead-producing districts in Britain. The geological position of St. Patrick Mine is the same as the Milwr Mine to the west, and the Pant-y-Go Mine to the east, each of which has paid immense profits. The Pant-y-Go cross-course traverses your sett for its entire length; you have, therefore, a cheap mode of intersecting the numerous east and west veins by driving on the said cross-course; beside it is a natural drain for the water, and you are, therefore, freed from the expense of pumping machinery. Near the southern boundary a good shaft has been sunk perpendicularly to a depth of 135 yards, which has proved the strata to be of the right description for producing lead ore in quantity. The 120 yard level has been driven north from the shaft on the course of the Pant-y-Go cross-course about 220 yards; some branches have been intersected containing lead ore, but the forebreast is yet about 40 yards in arrear of the point where an east and west lode is known to exist, and which I have no doubt when reached will be found productive. There is also another east and west lode about 40 yards north of the one referred to, and which will be intersected by continuing the present drivage; this lode has produced lead in quantity in shallow workings both in your sett and in adjoining mines. The 90 yard level has been driven north from shaft about 150 yards, and a branch has been intersected; this it is considered is in connection with some "pipes" of ore worked on by the ancient miners in your sett. A rise has been made in the roof of the level to a height of about 14 yards; this rise will in another 10 yards in height communicate with the said old workings, where it is reported good lead was left. The 60 yard level cross-cut in the chert has been driven from shaft north about 200 yards, and is within about 20 yards of a lode, which has been worked on in ancient times, and found productive in the same stratum, and I see no reason why it should not again be as productive as ever. I would also call your particular attention to the fact that the Pant lode of the Prince Patrick Mine passes through your property—probably about 180 yards in advance of your workings; this lode has produced thousands of tons of lead in Prince Patrick, and I would strongly advise you to sink a shaft on it without delay. Your workings in the 120 are only just entering the ground where you have a right to expect to make a discovery of ore, and by continuing the cross-cuts and sinking a shaft on the Pant lode you cannot, in my opinion, fail to discover a rich mine, the lodes you have before you being among the richest in the district. I shall be pleased to hear you have resumed working the mine, and shall expect at no distant date to be able to congratulate you on your having struck into a large body of ore.—H. B. VERCOE, M.E.

The CHAIRMAN, in moving the reception and adoption of the report, said that the operations at the mine had for some time been suspended for want of funds, the provision of which for future operations would be the chief question to discuss to-day. At the last meeting it was reported that additional grants of valuable mineral ground had been obtained, free of cost to the company, from the Duke of Westminster and the Rev. Mr. Richardson. The shareholders were asked, by taking up the unallotted shares, to subscribe capital to continue the development of the property, but this appeal proved futile. Now, however, times have changed, from a period of great commercial depression to that of activity—at any rate as far as mining is concerned—and he trusted that they might now find the small amount of capital necessary to effectually continue the workings of the mine. From time to time they had called in independent engineers, and all without exception have given most favourable opinions of the mineral wealth of the property. They had just heard the report of Capt. Vercoe, the local manager of the adjoining mine, Prince Patrick, in which he states his belief in the ultimate success of the undertaking. It was necessary for them to look the matter in the face, and ask themselves whether, after the large amount of money expended, they should not venture a small sum further to bring the undertaking to a success rather than relinquish the property. Of these alternatives one must be arrived at speedily. It was now twelve months since underground operations were suspended, so that according to a clause in their tack-note the lord could have forfeited or revoked it six or nine months ago. However, times then were bad, and the lords have not pressed us; but now there is such a great improvement in the lead trade, and a demand for all mining ground they not unnaturally wish us either to resume operations or to give it up to those who will. They had 2000 shares unallotted, and against this they had liabilities to the extent of 400*l.* The directors proposed that the 2000 shares should again be offered to the shareholders at 15*s.* for the 1*l.* fully-paid share, and should they be subscribed for they will, after paying off the 400*l.*, have a capital to work upon of 1100*l.* The directors are also anxious to make the mode of payment as light as possible; they, therefore, propose that the shares applied for shall be paid for in three instalments, extending over a period of six months. He (the Chairman) was the largest shareholder, and was quite willing to take his proportion providing other shareholders did the same. He might further tell them that the greater part of the 405*l.* debt was due to him for cash advanced to provide the labour costs, and this he would not ask to be repaid until after they had sufficient funds in hand to work the mines for the next six months, or he would take the debt out in shares. He could not do more, and hoped each would subscribe for his proportion, in which case he had every reason to believe their labours would yet be crowned with success, otherwise he would no longer be justified in using his personal influence with the lords in order to keep the matter open. It would be a matter of great regret to them as shareholders after five years labour, and after expending so much money, to see others come in and with a little additional capital reap the fruits of their past labour. He was, however, induced to believe that this appeal would not be in vain, for he had lately received letters from shareholders asking him to resume operations, and expressing themselves willing to assist to the extent of their proportions.

Capt. BATCHELOR enquired how far they had to drive to cut the lode?——The CHAIRMAN replied that Capt. Vercoe's report stated that at the 120 they had 40 yards to drive to do so. At the 90 they had but 20 yards to drive, and as the ground is soft in both places these points would be reached in a very short time. Capt. Vercoe being local manager of the adjoining mine—Prince Patrick—is well acquainted with the bearing of the lodes, because they pass through his mine, and the information he gives is very valuable.

A SHAREHOLDER understood that any money subscribed would be applied to the future working of the mine, and enquired the probable cost per month?

The CHAIRMAN repeated that if shareholders will take their proportion the money so subscribed shall be applied to the actual underground operations. The debt against the company was chiefly owing to him, but this should be liquidated by his taking shares. If they carried out the suggestion of Capt. Vercoe (in which he concurred) their monthly costs would be from 70*l.* to 80*l.*

The report was then unanimously adopted; the retiring director, Mr. J. J. Lynch, and the auditor, Mr. J. Wood, were re-elected, and it was resolved that the directors be requested to take steps to issue the remaining shares to the shareholders at 15*s.* per share, payable 5*s.* on application, 5*s.* in May, and 5*s.* in August. The proceedings terminated with the usual complimentary vote to the Chairman.

GLASGOW CARADON CONSOLIDATED COPPER MINING COMPANY.

The twentieth general meeting of shareholders was held at Glasgow on Monday—Mr. ARCHIBALD ARROL presided, After Mr. JOHN E. WATSON (the secretary) had read the notice calling the meeting,

The CHAIMAN said he presumed he might hold the reports, of which they had been for some time in possession, as read. The directors' report was not, he regretted to say, quite so favourable as they could have wished, but that was not owing to any circumstance over which the directors had any control, but was due to the market prices of copper being so extremely low during the whole of the past year. Not only were prices low, but tne standard price was fixed on a falling market, and by that means they were doubly punished Matters, however, had improved a little, and the last sale was about 100*l.* more for the same quantity of ore than for the two or three months previously. They thought the tide was now turned, and they looked forward to a much improved state of matters. The opening up of the mine had no doubt been rather disappointing, as the 90 had not proved so favourable as they had anticipated. The 102 had been opened up last year. Capt. Taylor thought he might come across a lode there, but in place of getting at it there it had taken a slide, and had been somewhat disordered. He had persevered in his work for nine or ten months before he got a new lode on the 102. That lode had been opened up, and was turning out exceedingly well. The directors had no further account of it beyond what had appeared in the report, but from the appearance of the lode—being from three to five feet wide—good results were anticipated. At the 90 Capt. Taylor was driving to get a new lode, and if it led up to the 102, then it might be said that a new mine had been discovered. The result had not been quite so favourable as the directors could have wished, but if that 102 lode turned out favourably, and could get in the 90 and 78 in anything like what was expected there, the mine would be in an exceedingly good position, and would take a new lease of life. Next year the mine would attain its majority, and he hoped it would from that time go on and prosper more rapidly than it had done in the past. During the year the directors had sold 432 tons less copper than during the previous year, and for that less quantity they had got 1526*l.* less than the year before, so that it was entirely from the low price of minerals that the result had been so unfortunate. They were not in a worse position than some of the mines in Cornwall; indeed their own mine was in a more hopeful position than a number of the others there. The Chairman concluded by moving the adoption of the report.

Mr. FORREST FREW seconded the motion, which on being put to the meeting was unanimously agreed to.

Mr. Thomas Ross and Mr. John M'Clure, the retiring directors, were re-elected.

Mr. THOMSON moved:—"That in recognition of the services rendered by the present directors during the year ending Dec. 31 last, an allowance of 100*l.* be made to them." Although, he said, there had been no dividend, that had not been the fault of the directors, but was entirely owing to the unprecedently low price of copper. The price of copper in fact was never lower than during 1879. A very considerable rise had now taken place, and if that held on the accounts would be very much better for the present year than for last year.

A SHAREHOLDER said he did not like to dissent to the proposal, but he thought it would be a pity to pay away money that had not been earned. He did not know where the money was to come from, and he would much rather that they gave them 200*l.* next year.

The CHAIRMAN said the meeting could not give any declaration that would be binding upon any future meeting, and if it was thought inadvisable to vote the 100*l.* there was an end of it. The directors did not do the work for money, but for the love they had for the mine.

The vote was then put to the meeting and carried unanimously.

The CHAIRMAN said the directors had under consideration the propriety of getting a rock-drill for the purpose of proceeding more quickly with the work. That might cost a few hundred pounds, but the directors thought it would be well spent money. Enquiries were being made as to the best drill to be obtained, and if copper was to continue rising in price it would be their interest to get the copper put into the market as speedily as possible.

A vote of thanks to the Chairman terminated the proceedings.

BODIDRIS LEAD MINING COMPANY.

A general meeting of shareholders was held at the company's offices, Coleman-street, on Jan. 31,

Mr. ALFRED THOMAS in the chair.

Mr. CUMMING (the secretary) read the notice convening the meeting, and the directors' and agents' reports and statement of accounts were submitted.

The CHAIRMAN stated that at the new shaft upon the Maes-y-pwll they put out a level and continued the rise, sinking the shaft, and at a depth of 12 yards from surface they came upon what has since proved to be the top of a rich course of ore. They are now driving upon its dip, and as they get increased depth so this lode continues to improve. They are going through a rich run of ore, and leaving valuable stoping ground both above and below. The 60 level is being driven as rapidly as possible, and will come into the run of ore upon the dip above. Then they will have an additional point, not only to drive in but to stope from. The Maes-y-pwll discovery is the most important, and it is the best that has been made in the district for many years. It is quite the talk of the county, and if it continues even in the upper measures they will have a splendid mine, but if they are successful in cutting the lode rich in the bottom measures they will have as it were two mines. Then with regard to the Craigiog lode they have been driving a cross-cut to try and cut it, but whether they had done so or merely cut a branch of it he could not say.

Mr. GREGORY said he visited the mine the year before last, and had since obtained the report upon it from a competent gentleman, who has a great opinion that at no distant date the property will become as valuable as Minera. He (Mr. Gregory) thought the property exceedingly well managed, and that everything done in connection with the management of the mine or the working expenses was done on a most economical scale. The machinery that has been purchased, according to the accounts furnished in the balance-sheet, had, he considered, been well bought, and he thought great credit was due to the directors for making the selections in the way that they have done—buying it at a time when it was to be had at a very low price.

The CHAIRMAN said they had a run east and west of at least two miles on the course of this Maes-y-Pwll vein, and their sett was 1½ mile the other way. A shaft has been sunk by a local company immediately to the west, and they have some very nice ore in it, and that is close to surface, but in our bottom measures that run of ore would be 200 yards deep. All these little trials made outside dip right in the Bodidris, and they all throw light upon our future workings. Then there is the company to the east (the Lead Era Company), which is working in the flat measures, where the ore "makes" in horizontal deposits instead of vertical veins. Many mines have done well in these horizontal deposits. The North Hendra is a case in point, Prince Patrick and Gwernymynydd are others, and there are two or three other mines, so that we have in addition to the fissure veins in the limestone all the flat measures to the east.

Mr. BARTLETT concurred with the remarks of the Chairman and of Mr. Gregory, and was glad to see that the ore had realised more than the estimate in the balance-sheet.

The retiring director and the auditor were unanimously re-elected.

The CHAIRMAN, in reply to Mr. Gregory, stated that they had just bought and paid for a 25-horse engine, which he thought would suffice. They would require to spend 200*l.* on a crusher.——The usual complimentary votes terminated the proceedings.

ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY.

The ordinary half-yearly general meeting of shareholders was held at the offices of the company, Finsbury-circus, on Friday, Jan. 30.

Mr. WILLIAM MARTINEAU, M.I.C.E., in the chair.

Mr. J. ARTHUR MORGAN, F.G.S. (the general manager), read the notice convening the meeting. The reports of the directors and of Mr. J. H. Clemes, the chief engineer and general manager in Mexico, and the accounts, were taken as read.

The CHAIRMAN said this was the first time he had had the pleasure of addressing the shareholders, and being able to report such a thing as a profit, and he thought even his predecessor had not this pleasure. The profit was very small, but still a profit at all, compared with the loss of over 3000*l.* on the last occasion, showed at any rate that they were moving in the right direction. Of course, they must bear in mind that the accounts presented were only to June 30, but even in the first six months of the year they made a clear profit of 87*l.* The accounts had been very closely overhauled by the auditors, and everything had been debited to the profit and loss account, and the result was the small profit shown. It was very gratifying to know that they had so far improved to the extent of making a small profit instead of a large loss. In the general preparation of the accounts he did not think there was anything very special to notice. The only item that at all called for remark—and that was a matter which the shareholders were informed of at the last meeting—was the sale of the schooner Providencia, and part of the amount had been received before the closing of the accounts, since which the balance of the purchase money had been paid to the company. They were now, he might say, passing through an altogether new phase in the existence of the company, especially in regard to the reduction of their ores. Their managers in Mexico, as the shareholders had been informed by the telegrams and reports lately published, had introduced a new system of reducing some of their ores—a system very well known and very generally practised in California and Nevada—which consisted of the smelting of the argentiferous lead ores which they knew so well under the name of black ores. Some of these ores, which they had been and were still reducing by the lixiviation process, it was considered were best adapted for smelting, and a furnace having been erected, the smelting process was now being tried. It was rather early for them to speak of the results of that process, as it had not been worked long enough for them to give any accurate data as to the amount of profit which the process realised. The latest telegram indicated that the furnace which had been erected, only a small one, was running regularly, and that pig-lead and regulus were being produced to the extent of about 400*l.* a week. They could hardly give the exact particulars, as at present they had only received the information by telegram. They had now three processes at work on the mine for treating the different classes of ores—the amalgamation for the docile ores, the lixiviation—which was a wet process, roasting and afterwards treating chemically for part of the black ores, producing the black precipitate which is shipped to this country; and thirdly, the furnace which was regularly running and producing argentiferous pig-lead. This lead gave about 250 ozs., and sometimes more, of silver to the ton, and a rough copper matte or regulus, giving about 112 ozs. to the ton, and about 20 per cent. of copper, which was sufficient to pay for the freight on it. The principal point relating to the underground mining operations upon which they could speak with satisfaction was the great improvement that had taken place in the lode in the lower workings of the Mina Grande. (Mr. Morgan pointed out on the section the 12 fm. level and the 15 fm. level, where the improvement referred to had taken place.) The reports on this point were certainly very encouraging. He (the Chairman) then read extracts from the reports of the 1st and 15th of December. A telegram, which had since been confirmed by letter from Mr. Clemes, had subsequently been received, stating that the width of the lode was 20 ft., that is that 20 ft. there was 7 ft. of what he called pay ore, which seemed to be ore of very good quality indeed, and that the lode was extending in length and improving in depth. As to what extent this improvement might take place they could at present only speculate, but it was very clear that they had a good mine in Mina Grande, and there was every indication that a good deal of the richer ore might be taken out that could be exported direct. Mr. Clemes had now two processes for dealing with the ores which he selects to treat there, and altogether it was to be hoped that they would derive very fair returns from that portion of the mine. This became the more necessary, as it would be seen from Mr. Clemes' report that he foreshadowed the probable almost extinction, at a comparatively early date, of some of the principal sources from which they had been drawing the green and docile ores—the Providencia, Virgen, and San Pedro stopes in the principal part of the mine. They were getting up into the old workings, and though there might be a good deal of ore to be got from these points yet, it would not do to depend on them very much, so that it became more important, seeing the existing state of things in the Dios Padre Mine, that they should develope an entirely fresh source of revenue, which the Mina Grande Mine now appeared to be in a position to give them. The improvement in the Mina Grande was unquestionably very great, and coming at the present time of much importance to them. There had been a suggestion as to the desirability of examining the bottom of Tirito again. The shareholders would remember that since the lift in the mine some years ago the lower workings in the Tirito shaft had been practically abandoned. As the company had been in want of means—want of capital—they had been obliged to get their returns from the parts of the mine which were immediately accessible. In order to really work in depth at the Tirito shaft they would have to spend a certain amount of money in purchasing pumping machinery for drawing up the water. The fire occurred before Capt. Morcom's time, and it must be remembered that since he had been there he had never seen the bottom of the Tirito shaft, and considering the very able way in which he had carried on mining in Mina Grande, and the important discoveries he had made in other parts of the mine, he (the Chairman) thought it very desirable that an effort should be made for Capt. Morcom to see and report upon the bottom of this shaft. It was perfectly well known that good ore was left there, and it did not appear that it would take much time or a large expenditure of money to draw the water from the shaft. An effort would be made to do this at once, so that Capt. Morcom could examine and report definitely on that part of the mine. As to his impressions and the desirability of spending money in the development of that part of the property, Capt. Morcom had now had an opportunity of becoming acquainted with the formation and the manner in which the ore was found in it, and he (the Chairman) thought his opinion on the bottom of the Tirito shaft—which it was hoped might be furnished to the next meeting—was very desirable. The accounts had been prepared in the usual way, and there was no very special point to notice. The item of the schooner Providencia would be altogether closed in the next account, as the amount for which it had been sold had been paid to the company. There was one point he would like to notice, and that was the item of less over-estimated 784*l.* 11*s.* 9*d.* in reference to the silver ore and Petanque metal raised and sold by Mr. Clemes. It must not be supposed from this that Mr. Clemes had over estimated in any sense the assay value which he had founded his estimates upon; the difference arose entirely owing to the fact that the silver dollar had been calculated at the old value of 4*s.*, whereas it had depreciated, and was not really worth that amount. Mr. Clemes' estimates of assays were always on the safe side, the directors having specially cautioned him in this respect. The loss of 784*l.* 11*s.* 9*d.* was on a total of nearly 19,000*l.* (18,768*l.* 2*s.* 8*d.*) Having expressed his desire to afford the fullest information in his power, if there were any points upon which the shareholders required any additional particulars, he (the Chairman) moved that the reports of the directors and mine managers, together with the accounts for the half-year to June 30, now submitted, be received and adopted.——Mr. J. P. GEORGE SMITH seconded the motion.

Mr. WILDE asked how long it would take to drive the Mina Grande 24 fm. level 120 ft.?——Mr. MORGAN: About three months.——Mr. WILDE: And the cost.——Mr. MORGAN: We cannot tell; it would be through very hard ground, no doubt.

Mr. WILDE said he understood that the company had obtained coal in the neighbourhood of their property, and if that were so it was a very important item for the company. With regard to the accounts, he did not like to see the interest on the debentures charged as an expenditure, thus reducing the profit actually made by 686*l.* 10*s.* It was a mere question of book keeping, but he thought that it was rather unjust to the mine to treat the debenture interest as an ordinary expenditure. Were not the bonds nearly due?——Mr. MORGAN said the bonds were not repayable until June, 1881.

Mr. WILDE asked if any approximate estimate could be given of the profits made during the past six months?——Mr. MORGAN replied that for the three months ending Sept. 30 the profit was 1700*l.* Beyond that they knew nothing, but as the green ores had turned out rather worse than was expected, the profit for the last three months might be a little less than for the first quarter.

Mr. WILDE suggested that the shareholders should be provided with a rough section of the mines; and said that, on the whole, he thought they might congratulate themselves on being in a much better position than they were some time ago.

Mr. H. SWAFFIELD, one of the auditors, quite agreed with Mr. Wilde as to the undesirability of debiting the interest on the debentures as an ordinary expense, and said that the item was so treated before he became one of the auditors, and had not since been altered.

The CHAIRMAN said, with regard to the question of coal, Mr. Clemes in his earlier letters spoke of Mezquito coal, and the directors thought he had got some lignite in the neighbourhood, but from some of his later letters it seemed to be clear that he referred to charcoal. With regard to supplying a section of the property, the directors were expecting to get some better sections from the other side, including one from the Mina Grande Mine, and they would consider the question of getting a longitudinal section lithographed for circulation amongst the shareholders.

The reports and accounts were then unanimously adopted.

On the motion of Mr. WILDE, seconded by Mr. BUSH, a vote of thanks was passed to the Chairman and directors; and the CHAIRMAN having briefly acknowledged the compliment, the meeting closed.

PORT PHILLIP AND COLONIAL GOLD MINING COMPANY.

The ordinary general meeting of shareholders was held at the Cannon-street Hotel on Thursday,

Mr. A. T. THOMSON, the Chairman, presiding.

The notice calling the meeting was read by Mr. J. W. PURCHASE, the Secretary; the report of the directors was taken as read,

The CHAIRMAN said the directors generally made the report so full that there was little left for the chairman to say. This was the first month in which the alteration of the postal contract with the Peninsular and Oriental Company came into force, and the mail now came in on Thursday instead of Monday, and went out in the following week, so that seven clear days were given to answer letters. A letter had been received from Mr. Bland about an hour and a-half before the commencement of the meeting; the directors had scarcely had time to consider it, but the general tenour of it was that the amount of quartz crushed was less than for the previous month, and the gold was 49 ozs. less, but that the average of the return of gold was larger. The balance-sheet of profits enable 900*l.* to be divided between the companies. The net receipts from the gold exceeded those of last month, but the receipts from the profits were less. The total receipts from the Criterion exceeded last month by 156*l.* Some time since a new process had been adopted at Sandhurst, called the chlorine process, by means of which it was thought that a large amount of gold could be extracted frem the tailings, and thus prove of great importance to the company; but the hopes of the directors in this respect had been somewhat dashed, because the quantity of gold obtained from 5 tons of tailings which had been treated by the chlorine process had not exceeded the quantity obtained by the ordinary process, the quantity in each case being a little over 4 ozs. per ton. The portion of the Criterion claim which had been purchased by Mr. Bland was being steadily worked from the 8 and 9 fm. levels, particularly from the eastern vein, where it was believed there was a large quantity of good quartz. When the levels approached the boundary of the Criterion claim the upper workings would be denuded of water, and in it there was a large quantity of good piping. This portion of the property was purchased out of the joint revenue of the two companies. There was a larger portion of it, and if they could get that larger portion into their hands at a trifling cost it would be of considerable advantage to them. There was another letter which the shareholders had not yet seen, and which immediately preceded the last letter to which he had just referred. The principal point in it was that the water was gradually draining away, and there were 300 ft. of 10 in. pipes in the shaft, trucks, and other material, which would go a long way towards paying the original cost of the mine. In conclusion, he moved the adoption of the report and accounts.—Mr. A. COBBETT seconded the resolution.

Colonel STEWART suggested that in future accounts the quantity of gold should be given in money value.

Mr. DONAGAN drew attention to some of the items of the expenditure, which he thought were excessive, and said he hoped some attempt would be made to reduce them in the coming year.

Mr. J. RUSSELL FREWER sympathised with some of the remarks made by Mr. Donagan, but he entirely disagreed with him in thinking that cheap services were the best. His experience was quite otherwise; but he thought some were somewhat overpaid, and that the royalties were too heavy.

Mr. WRIGHT thought 500*l.* a year was a fair sum for the directors, and he knew a bank where the auditors only received 30*l.*, whereas the auditors of this company were paid 40*l.*

The CHAIRMAN remarked that the amount had now been reduced one-half.

Mr. DONAGAN rose to offer some observations, but the CHAIRMAN ruled that he was out of order. The Chairman added that Mr. Bland got 800*l.* a year from one company and 600*l.* from another, and his services were much more valuable than some of the shareholders seemed to think.

The report and accounts were then adopted, and on the motion of the CHAIRMAN, seconded by Mr. WRIGHT, the dividend recommended—1s. 4d. per share—was declared, payable on March 1.

The CHAIRMAN proposed the re-election of the retiring directors—Messrs. Cobbett and Herapath.

Mr. WRIGHT seconded the proposition, which was adopted, and the auditor was re-appointed.

A vote of thanks to the Chairman and directorsand to Mr. Bland was passed, and the meeting then terminated.

VICTORIA (LONDON) MINING COMPANY.

The ordinary general meeting of shareholders was held at the City Terminus Hotel, Cannon-street, on Thursday,

Mr. A. T. THOMSON in the chair.

Mr. J. W. PURCHASE (the secretary) read the notice convening the meeting, and the report and accounts were taken as read.

The CHAIRMAN said the investments of the company were virtually represented by the South Clunes Company, which had been advancing faithfully, and doing well. The last reports were the best received, and the one which arrived that morning—which would be as usual published *in extenso*—was the best they had ever had from the property. Reductions had been made in the rent and also in Mr. Bland's salary during the past year. The shareholders would remember that they instructed the board to write to Mr. Bland upon the subject. They did so, and Mr. Bland very handsomely placed himself in the hands of the directors, and his salary had been reduced to 50*l.* The tributers seemed to be doing pretty well, but he could hardly at present give any definite statement as to the results of the Clorine process. The Chairman concluded by moving the adoption of the report and accounts, which he thought were sufficiently explicit without any further comment.

A SHAREHOLDER asked to what date the directors were paid?—The CHAIRMAN replied that they were paid up to December 31.

A SHAREHOLDER asked what was done with the unclaimed dividends?—The CHAIRMAN, in reply, said that nothing was done with them, as the shareholders were continually calling for them, and the directors could not place the sums on deposit.

Mr. RAY complained very much of the directors' fees, which he considered excessive. He had made this remark before, but the board always fell back upon the Deed of Settlement—a deed which was quite unsuited to modern times. Mr. Bland had set a very good example, and the board would do well to follow it.

The CHAIRMAN, in reply, intimated that the board was not prepared to take a less amount than 200*l.* a year for their joint services. It was certainly a low rate of remuneration enough for any company to pay.

A SHAREHOLDER thought it was paying 200*l.* a year for management which merely meant looking over a few letters. He thought the expense outrageous, when it was remembered that only 6000*l.* of the capital was left—a view which Mr. Donagan supported.

Mr. COBBETT seconded the motion for the adoption of the report and accounts, and it was adopted.

On the motion of the CHAIRMAN, dividends of 5d. per share on the fully-paid shares and 4d. per share on those partly paid were declared, payable on and after March 1 next.

The CHAIRMAN then proposed the re-election of the retiring director, Mr. J. R. MacDonnell.—Mr. COBBETT seconded the proposition, which was adopted after some opposition, and an attempt to induce Mr. MacDonnell to set an example to his colleagues by consenting to take less fees.

Mr. Brooks and Mr. Donagan, the auditors, were re-elected, and the meeting then closed with the usual compliment.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

HAWKINS AND COMPANY (Limited).—Capital 8000*l.*, in shares of 50*l.* To continue the business of cultivating and raising flowers at 2, Charles-street and 80, Rishop's-road. The subscribers (who take one share each are—T. Hawkins, 80, Bishop's-road; F. G. Fuller, 7, The Terrace; W. Alexander, Camberwell; J. G. L. Stephenson, 6, Drapers' Gardens; C. Wright, 74, Evesham Park Villas; E. B. George, 113, Blenheim-crescent; J. N. Coombs, 14, Great Winchester-street.

THE GREAT GRIMSBY CO-OPERATIVE BOX AND FISH COMPANY (Limited).—Capital 50,000*l.*, in shares of 5*l.* For the carrying of fish from port to port, and other transit, for the purpose of sale. The subscribers (who take 20 shares each) are—G. L, Alward, Great Grimsby; H. Johnstone, Great Grimsby; J. Plastow, Great Grimsby; G. E. Allington, Great Grimsby; J. Alwood, Great Grimsby; J. Randall, Great Grimsby; W. Moss, Great Grimsby.

THE SOUTH-EAST WYNAAD ESTATES AND GOLD MINING COMPANY (Limited).—Capital 100,000*l.*, in shares of 2*l.* To purchase or otherwise acquire lands, estates, and properties in India or elsewhere, to improve and cultivate same, and to purchase, lease or acquire, and work any gold mines, minerals, and mining rights. To adopt and carry into effect an agreement made between C. R. Dawson on the one part, and C. Tomalin, a trustee for the company. To work the gold mines and reefs and mining rights under or upon the lands, estates, and properties of the company under the said agreement, and to erect and establish all works, machinery, &c., that may be necessary for the purposes of the company. The subscribers are—H. P. Stone, Stourbridge, Esq., 150; S. H. Hewitt, 8, Russell-road, member of Lloyds, 150; A. Hall, 35, Craven Hill Gardens, Esq., 150; R. J. Laing, Upper Clapton, C. E., 150; C. J. Turner, Lee, gentleman, 50; P. Morrison, 7, Highbury Hill, gentleman, 20; A. Wyatt, 13, Woodstock-road, gentleman, 5: 1000*l.* to be divided amongst the members of the board, each director's qualification being 150 shares.

THE MINES INVESTMENT ASSOCIATION (Limited). — Capital 21,000*l.*, in shares of 1*l.* To purchase and sell shares in mines and any interest in mines and mining property. To act as agents for mining companies or owners of mines, and to establish and aid such mining companies and owners. The subscribers (who take one share each) are—A. Aylard, Little Ilford; J. Davies, 21, Finsbury Park; J. F. Copeland, Penge; J. Andrew, Tollington Park; T. Lissons, East Dulwich; E. M. Pigram, Upper Tollington Park; M. McAvoy, 20, Medina-road. Director's qualification 50 shares.

AERATED BEVERAGES COMPANY (Limited).—Capital 10,000*l.*, in shares of 2*l.* The manufacture and sale of aërated and mineral beverages of every description. The subscribers (who take one share each) are—E. Smith, 8, Mecklenburgh-street; T. Hamilton, Fleet-street; H. L. Florence, 3, Verulam Buildings; C. Jones, 8, Buckingham-street; J. C. Barnard, 47, Lincoln's Inn-fields; N. S. Kerr, 42, Grove-road; A. Sargant, Clapham.

BELGRAVIAN ICE COMPANY (Limited).—Capital 12,000*l.*, in shares of 1*l.* To supply the public with pure ornamental and rough ice. The subscribers (who take 10 shares each) are—G. F. R. Louth, 63, Great Tower-street; F. Rosset, 9, Old Broad-street; R. Schreiber, Hart-street; A. Heidreke, 63, Great Tower-street; O. Oldenburgh, 10, Victoria Grove; E. Tanchert, 34, Queen-street; V. Eldred, 11, Queen Victoria-street.

THE EASTBOURNE STEAM LAUNDRY COMPANY (Limited).—Capital 5000*l.*, in shares of 1*l.* To carry on the business of a laundry in all its branches. The subscribers (who take one share each) are—J. H. Capleton, 199, Euston-road; J. Hanex, Fastbourne; J. G. Earle, Eastbourne; J. A. Drayton, Eastbourne; W. Linnfield, Eastbourne; J. Cable, Eastbourne; E. E. Jenkins, Eastbourne.

THE FINE ARTS REPRODUCTION ASSOCIATION (Limited).—Capital 100,000*l.*, in shares of 20*l.* To reproduce and reduce statuary and ceramic and other works of art. The subscribers (who take one share each) are—R. S. Wornum, 39, Old Bond-street; H. C. Joubert, 163, Regent-street; J. Joubert, West Hammersmith; W. B. Harrison, 19, Change-alley; J. de Lerman, 85, Gracechurch-street; P. Richards, 1, Southampton-street; W. C. Heald, Elmstone-court.

NAVIGATION TELEGRAPHS COMPANY (Limited).—Capital 20,000*l.*, in shares of 5*l.* To manufacture and dispose of an apparatus for transmitting and receiving signals on vessels, and for other purposes. The subscribers (who take one share each) are—J. Colledge, 57, Doughty-street; H. Harne, 7, Warwick-court; T. Raftenz, 7, Tower Hill; A. F. Hersey, West Ham; J. L. Davies, South Norwood; F. Basley, Board of Trade; T. W. King, Tower Chambers.

THE IDAHO SMELTING COMPANY (Limited).—Capital 20,000*l.*, in shares of 20*l.* To carry on the business of smelting ores, buying and selling same, and other substances, in Idaho, United States. The subscribers (who take one share each) are—S. Harrison, Woodford; J. Bawden, Canonbury; H. Tyler, Croydon; H. G. Chalkley, Tottenham; J. Harrison, Tottenham; G.W. Burns, Croydon; T. H. Chalkley, 12, Bishopsgate-street Without.

G. T. HARPER AND COMPANY (Limited).—Capital 96,000*l.*, in shares of 10*l.* To acquire a certain number of steamships, and to carry on the business of a shipowner in all its branches. The subscribers (who take one share each) are—G. T. Harper, Southampton; T. Summers, Southampton; T. A. Bevis, Southampton; H. Bee, Southampton; J. Bowcus, Southampton; R. Pollock, Woolston; D. Brown, Woolston.

THE LADIES PHILANTHROPIC SOCIETY (Limited).—Capital 5000*l.*, in shares of 1*l.* For making cigarettes by machinery and otherwise and generally carrying on the business of tobacconists. The subscribers are—E. Gibson, Chiswick, 5; G. T. Stronach, Shepherd's Bush, 1; W. E. Turner, Verulam Club, 1; F. Adams, 9, North Audley-street, 1; R. C. Mayne, 17, Boundary-road, 1; A. P. Kirkby, Hornsey, 1; C. E. M. Crickmore, Haverstock Hill, 1.

BASS, RATCLIFFE, AND GRETTON (Limited).—Capital 3,200,000*l.*, in shares of 100*l.* To continue the long-established business of brewers established at Burton-on-Trent. The subscribers (who take one share each) are—M. T. Bass, Burton; R. Ratcliff, Burton; J. Gretton, Burton; J. S. Clay, Burton; M. A. Bass, Burton; L. Gretton, Burton; R. Ratcliff, Burton; C. J. Clay, Burton.

CAPITAL AND COUNTIES BANKING COMPANY takes the powers of limited liability under the Act of Parliament.

THE WORCESTER LEATHER AND GLOVE COMPANY (Limited).—Capital 20,000*l.*, in shares of 10*l.* To purchase and carry on a business of leather and glove manufacturers at Worcester. The subscribers are—H. Willis, Worcester, 50; F. Corbett, Worcester, 5; C. E. Sims, Worcester, 50; J. W. Williams, Worcester, 5; D. Shaw, Worcester, 20; H. Corbett, Worcester, 5; W. Pike, Worcester, 20.

THE PLUMBLEY COLLIERY COMPANY (Limited).—Capital 25,000*l.* in shares of 50*l.*, a 100 fully paid up deferred shares being allotted to John Rhodes in pursuance of the provisions of an agreement by which the company purchases the estate and interest in certain lands, mines, and minerals situate at Eckington and at Bramley, Derby, and any other mines and mining property. To carry on the business of coal and iron masters, co l, coke, and iron merchants, coke manufacturers, smelters, ironfounders, and brick and tile manufacturers. To sink pits or shafts in and drain, pave, build upon, or otherwise improve any such lands and premises, and to carry on the business of colliery owners in all its branches. The subscribers are—H. Newman, Lincoln, timber merchant, 20; W. J. Warrener, Skelling, merchant, 70; W. Watson, Lincoln, accountant, 20; W. Spencer, Lincoln, timber merchant, 20; C. K. Tomlinson, Lincoln, chemist, 20; J. Ruston, Lincoln, engineer, 20; W. T. Page, Lincoln, solicitor, 20. Director's qualification. 20 shares; remuneration 250*l.*, to be divided amongst the members of the board. The agreement has not been registered.

THE LONDON DRY DOCKS COMPANY (Limited).—Capital 500,000*l.*, in shares of 20*l.* To purchase or otherwise acquire, construct, and carry on the business of dock-owners in London. The subscribers (who take one share each) are—C. Crouch, 1, Railway-place; A. Carter, Millwall Dock; R. Bell, Horseferry Dry Dock; A. Moreland, King and Queen Dry Dock; T. Rugg, Cubitt Town Dock; J. D. Pender, 113, Fenchurch-street; W. Walker, 1, Railway-place; F. Good, 113, Fenchurch-street.

THE BLAENAVON COMPANY (Limited).—Capital 200,000*l.*, in shares of 10*l.* To purchase the Blaenavon Iron and Steel Works, and to carry on the business of ironmasters, steel manufacturers, and colliery proprietors The subscribers (who take one share each) are—C. Morrison, 53, Coleman-street; S. Laing, 5, Cambridge Gate; W. Smith, Hatfield; R. W. Baillie, 15, Old Bond-street; T. B. Morris, 4, Bank Buildings; W. Brand, 65, New Broad-street; E. F. Quilter, Belvedere-road.

THE COLLEGE COMPANY, HARROGATE (Limited).—Capital 10,000*l.*, in shares of 10*l.* To establish and carry on at the College, Harrogate, or elsewhere, boarding schools and other educational establishments. The subscribers are—J. Lounds, Leeds, 50; J. J. Flitch, Leeds, 50; A. Denby, Harrogate, 50; R. Horner, Leeds, 20; M. Quickfall, Leeds, 25; J. Williamson, Leeds, 10; E. Weston, Leeds, 10.

YSTWITH LEAD MINING COMPANY (Limited).—Capital 24,000*l.*, in shares of 1*l.*, of which 17,000 are allotted as fully paid up. To purchase the leasehold interest in the South Cwmystwith Mine, in the parish of Gwns, Cardiganshire, together with all plant, machinery, &c., connected therewith. To work, explore, develope, and maintain the mines, mineral propertics, and works that may from time to time come into the possession of the company, and to conduct and carry on the business of raising, working, mining, and selling lead and other ores, metals, and minerals in all its branches. The subscribers (who take one share each) are—G. Bedford, Lewisham, stockbroker; C. S. Quatermaine, 80, Cornhill, clerk; A. Macdonald, Forest Hill, gentleman; H. Davey, 80, Cornhill, stockbroker; G. Ross, 80, Cornhill, stockbroker; H. R. Moore, Thornton Heath, secretary; A. Kerly, 14, Great Winchester-street, solicitor. There is no agreement registered. A director's qualification is fixed at 100 shares.

MONA MINES (Limited).—Capital 40,000*l.*, in shares of 5*l.* To acquire by purchase or otherwise certain mines and smelting works known as the Mona Mines, situate at Amlwch, Anglesea, along with the plant, buildings, machinery, &c., and any other mines or mining property. To raise, work, purchase, and sell minerals and metals of all kinds, and to dress, reduce, smelt, refine or otherwise treat or prepare minerals and the products for market. The subscribers (who take one share each) are—John Carr, 1, Warnford-court, broker; F. Hunt, 75, Old Broad-street, gentleman; E. P. Oldrey, 20, Throgmorton-street, merchant; E. Hunter, Blackheath, no occupation; J. Sinclair, 144, Leadenhall-street, merchant; James Carr, 1, Warnford-court, broker; H. Gutierrez, 8, Drapers Gardens, sharedealer. The first directors are W. B. Dick, E. Hunter, J. Sinclair, J. W. Paynter, H. Roberts, and R. Hughes.

RICHARD AINSWORTH AND COMPANY (Limited).—Capital 10,000*l.*, in shares of 10*l.* To carry on in Blackburn or elsewhere the trades of brass and iron founders, copper workers, &c. The subscribers are—W. Walsh, Blackburn, 50; F. Dodd, Blackburn, 10; W. H. Walsh, Blackburn, 5; T. Walsh, Blackburn, 5; J. Oddie, Blackburn, 2; J. Ray, Blackburn, 2; H. Gardiner Graham, Blackburn, 1.

THE INVESTMENT REGISTRY AND STOCK EXCHANGE (Limited).—Capital 200,000*l.*, in shares of 1*l.* and 5*l.* To carry on a co-operative business in connection with the purchase and dealing in stocks, shares, debentures, &c. The subscribers are—Col. W. Fielding, 23, Brook-street, 100; E. B. de Fonblanque, 13, Emperor's Gate, 200; C. Munro, 27, Eaton-place, 1; Viscount Pollington, 8, John-street, 25; A. A. Broad, Croydon, 1; A. Woods, 3, Norris-street, 1; E. A. Harborow, Leytonstone, 672.

POND'S EXTRACT COMPANY OF LONDON (Limited).—Capital 20,000*l.*, in shares of 10*l.* For the manufacture and sale of an article called Pond's Extract of Food. The subscribers are—F. W. Hunt, New York, 440; H. Morgan, New York, 40; P. Ashman, New York, 40; A. H. MacVaughan, New York, 100; P. Fort, New York, 100; E. W. Palmer, New York, 50; J. Palmer, New York, 40; S. W. Thomas, New York, 40; T. Fearey, New York, 20; J. W. Eaton, New York, 20; W. H. Fassett, New York, 10.

DEVONIA STEAM-SHIP COMPANY (Limited).—Capital 24,000*l*, in shares of 200*l.* To purchase the Devonia and to carry on generally the business of a shipowner. The subscribers are—R. Bovey, 85, Gracechurch-street, 4; H. Sleigh, Leek, 3; R. Holman, 23, St. Mary Axe, 2; J. Barrett, Croydon, 3; W. Treseder, Cardiff, 2; J. Bovey, Cardiff, 4; F. Primaveci, Cardiff, 2.

THE PATENT ENAMEL ADVERTISING COMPANY (Limited).—Capital 25,000*l.*, in shares of 1*l.* To acquire and use certain inventions for enamelling glass for advertising and other purposes. The subscribers (who take one share each) are—T. Kent, 51, Lee Park; Admiral G. Eliot, West Kensington; General W. F. Nuthall, 40, Baron's Court-road; G. A. Tooks, 46, Addison Gardens; Colonel J. D. Shakespear, 42, Barons Court-road; G. C. Silk, Abchurch-yard; H. F. Lewis, Croydon.

THE MINERALS COMPANY (Limited).—Capital 5000*l.*, in shares of 10*l.* To carry on the business of converting and dealing in minerals, stone, earths, &c. The subscribers are—M. R. Campbell, Surbiton, 40; E. Milleken, Putney, 30; E. L. Nugent, 33, Chancery-lane, 10; A. Clayton, 6, Westminster Chambers, 10; F. Clayton, Cold Harbour-lane, 10; M. Moore, 13, Montpelier-square, 1; J. Davies, 6, Great St. Helens.

THE DARLINGTON BREWERY COMPANY (Limited). — Capital 25,000*l.*, in shares of 10*l.* To acquire the Victoria Brewery at Darlington, and continue the business. The subscribers are—W. Robinson, Darlington, 20; E. J. Rawley, Harrowgate, 20; A. Nicholson, Harrowgate, 5; J. Burnside, Blackwell, 20; E. Manners, Darlington, 681; J. E. Manners, Darlington, 10; J. Clay, Stockwell, 10.

THE DANUBE STEAMSHIP COMPANY, NO. 1 (Limited).—Capital, 8395*l.*, in shares of 365*l.* To purchase steam and other vessels, working and trading with same. The subscribers (who take one share each) are—E. Hannay, 85, Gracechurch-street; A. B. Ward, 85, Gracechurch-street; F. S. Watts, 85, Gracechurch-street. A. T. Lambert, Isleworth; S. H. Burgess, Hammersmith; W. Flux, Paddington; J. R. Slade, 3, East India Avenue.

NEW BROADFIELD SPINNING AND MANUFACTURING COMPANY (Limited).—Capital 15,000*l.*, in shares of 10*l.* To purchase and work the Broadfield Mill, situate at Little Clegg, Smithy Bridge, near Rochdale, Lancashire, along with the plant, and to carry on the same as a cotton spinning and weaving business. The subscribers (who take one share each)are—J. A. Winterbottom, Littleborough; J. Walmsey, Wendle; E. Winterbottom, Littleborough; J. Cockroft, Littleborough; E. Robinson, Shawforth; A. Law, Littleborough; A. Turner, Rochdale.

REPORT FROM CORNWALL.

Feb. 5.—A fortnight since we pointed out that there were indications of a lull in the rapid upward tendency of the tin standards, which it seemed wise not to neglect. The effects of the causes on which we based that conclusion were not so quickly apparent as at the moment appeared likely, and the next few days saw a further important advance. During the past week, however, there has been a slight amount of dulness, which culminated to some extent on Monday in a pretty wide-spread belief that a fall of 3s. or so in the standards was imminent. The expectation was realised on Tuesday, when a fall of that amount was officially announced, and not improbably may be followed by a further reduction ere the tide again turns.

We attach very little importance to these fluctuations, and chiefly allude to them by way of caution. The position of mining at this moment is sounder than it has been for many years, but we have need of all things for the purpose of consolidating that position to be equally heedful of too little or too much confidence. There could be no greater folly thau to be panic-stricken at a slight decline, unless it were to be inflatedly speculative. One point which must be borne in mind, but which we are afraid does not always receive the attention it deserves, is that the weekly revival and extension of mining enterprise must mean of necessity a considerable increase in the output of tin (and of copper also), which cannot fail in the long run to affect the prices. Though tin may go up the 15*l.* or 20*l.* more that we have heard of, we expect, therefore, to see again a reaction from that point and the establishment of more moderate and more certain prices. A moderate steady price is, in fact, what we most want—a price which shall be remunerative to our own mining on the one hand, and not stimulative of foreign competition on the other.

Capt. Teague bids fair to be one of the most prominent "mining kings" that Cornwall has ever known. Among practical miners he must now be by far the largest holder of shares in the county. He holds very large stakes in all the mines with which he is connected, notably in Tincroft and Carn Brea, and he has just acquired over 900 shares in West Poldice, the bulk of those held by the late Sir F. M. Williams, which give him the preponderating influence in that concern, which has a very extensive sett, and is regarded as likely in such hands to do well. Capt. Teague has also a good interest in Wheal Kitty, and in Penhalls and Blue Hills, the former of which last week resumed dividends, and the other two of which are making, like Tincroft and Carn Brea, substantial profits During the past year Capt. Teague extended his business engagements by becoming a director of the Cornish Bank, noted below, and still more recently he has become connected with tin smelting. What with all this, and the management of his handsome landed property, he is one of Cornwall's most busy as well as most successful men.

The Cornish Bank (Limited) has held its first annual meeting, and shown a thoroughly sound and satisfactory state of affairs. This bank, it will be remembered, is really a reconstruction on the joint stock principle of the Cornish Bank of Messrs. Tweedy, Williams, and Co. The profit has not been large so far, but quite as large as was to be expected under all the circumstances, and in another year it is confidently anticipated that dividends will be resumed.

The question of the advance of wages to the surface hands on mines has not in all quarters met with the attention it deserves. With very few exceptions all engaged in mining were willing during the depression to make the best of the inevitable, and there ought to be no reluctance to give them the advance to which they are fairly entitled. We mention surface hands specially, because the men underground are for the most part paid already on an advanced standard, It is inevitable that in this and other ways working expenses must show some increase.

The trials in connection with the Explosives Committee, to which we referred a short time since, will be renewed within a few days, probably in the forthcoming week; and, as already mentioned, at the Seveock Quarry, Chacewater. Two levels are to be driven, each

7 ft. high and 4½ ft. wide, in such a manner as to give a week's trial in level driving to each competing explosive—dynamite, tonite, and Liverpool cotton powder in one level, and common powder, Espir powder, and compressed powder in the other. Makers of other explosives desiring to compete will do so if they communicate with Mr. J. H. Collins, F.G.S., the secretary, on or before Saturday next. Each level is to be driven at least 3 ft. by the workmen of the committee before the competition commences, when the manufacturers of the competing explosives will take up the work with their own men under the supervision of the agent of the committee. Should any of the competitors fail in this the committee will try the explosives in question with their own men. The scheme is exceedingly well arranged.

A very wise step has been taken in deciding to erect a convenient and commodious mining exchange at Redruth. "Tabb's" has answered its purpose in this respect to the utmost of its capacity, and during the depression it would have been pure folly to have desired anything better than the accommodation afforded by that well-known hostelry. The business, however, has now revived to such an extent that, as Mr. Bain pointed out when the new Mining Exchange was launched, the crush was equally inconvenient to the mining visitors and to the conduct of the regular business of the hotel. Thanks to the ready way in which Mr. Basset has once again come to the fore, and leased a central site at the market house for 20 years at a nominal rent of 1*l*. a year, all difficulties were removed from the way of the new undertaking, and by Lady-day the exchange is to be ready for occupation. It is to cost about 300*l*., and the main room will be 40 by 24 ft. Only one mistake seems to have been made, and that is not a very important one. To our thinking Cornwall Mining Exchange would have been a much better name than the one adopted—Redruth Mining Exchange, which is too narrow and local. It is quite true that around Redruth, Illogan, and Camborne the chief mining enterprise of the county is at present to a large extent concentrated, but this was not always so, and it may not always be so. There are many indications of reviving interest and industry in districts from which almost the last vestige of mining appeared to have have been driven, and the Redruth Mining Exchange will find it difficult to hold the position of the Cornwall Mining Exchange if such a revival should take place if it adheres to what is so purely a local name. However, as we have said, and at any rate under existing circumstances, the point is not a very important one, and we wish the new venture every success. Its promoters aim at supplying a general want, felt alike by themselves and by the public at large, and they have set about it in a thoroughly practical way.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Feb 5.—Pig-iron is being put upon the market by speculators but without much success, for buyers have generally satisfied their requirements for the present, and vendors are unprepared to sell except at a large profit. The descriptions thus offered embrace hematites, Tredegar high-class pigs, Derbyshire, and Middlesborough brands. Speculators are selling at 6*l*. Tredegar iron which they bought within 4*l*., and which has yet to be delivered. People who are buying at 6*l*. believe that they will by-and-bye be able to re-sell at a good profit. Agents of makers refuse to sell at under 7*l*. Native pig makers are strong at former rates. New orders for finished iron are languid this week, even as last week. Still the works keep fully on, and masters are not at all anxious to book further at present. Unmarked bars are 8*l*. 5s., sheets (singles) are 11*l*. 10s., and lattens 14*l*. to 14*l*. 10s. Tin-plates are very active, and one firm has this week booked an American order extending over three months at prices ruling at date of delivery. Staffordshire forge coal is being run harder than usual by the Cannock Chase descriptions, which are being offered at 1s. per ton under Staffordshire sorts. Best Cannock Chase slack is this week advanced 6d. per ton.

Important information as to the drainage of the mines in South Staffordshire transpired at a meeting of the Mines Drainage Commissioners, on Wednesday, in Wolverhampton. A special committee lately appointed to reconsider the boundaries of the Bilston and Tipton districts propose to put the greater portion of the north-west side of the Bilston district into the Tipton district, leaving the eastern side to form the Bilston district pure and simple. The commission, as a whole, will consider this proposition in a month hence. At the same meeting the Kingswinford committee submitted a motion which pointed to preparations for the drainage of a portion of the mines in that district, but it was opposed, and was ordered to be referred back. The Chairman secured the sanction of the meeting to negociate a further loan of 10,000*l*. upon the security of the rates for the carrying out of surface drainage works. It is estimated that to complete them a further 6000*l*. will by-and-bye be necessary.

The following are the seven successful candidates who, with nine others, came up at the recent examination for mine managers' certificates at Wolverhampton:—Messrs. Geo. Turner, Dudley; Robert S. Williamson, Cannock and Rugeley Collieries; P. M. Chester, Blackwell Colliery, Alfreton; J. A. Fullwood, Gornal; R. H. Ward, Willenhall; John Dudson, jun., Bentley; and Arthur H. Walker, Tettenhall, Wolverhampton. This examination has shown a higher percentage of passes than have any of the previous examinations, notwithstanding that the standard was raised for the occasion.

During the week the magistrates of Newcastle-under-Lyme have had before them several cases in which the Mines Regulation Act has been infringed. The charges arose out of an explosion which took place at the Fair Lady Pit, Leycett, on Sept. 12, by which eight men were killed. Mr. R. Stevenson, late manager of the pit, was charged (1) with not exercising proper control and supervision over the pit, (2) for not seeing that there was adequate ventilation, and (3) for not employing a competent fireman. The evidence showed that there was gas in the pit prior to the explosion and after, that Mr. Stevenson was not down the pit for 10 days preceding the explosion, and that he left the pit in charge of a butty named Burgess, who was also charged with not securing proper ventilation. The manager was fined 5*l*. and costs upon the first charge, and 10s. and costs upon the second; the third charge was dismissed. Burgess was fined 20s. and costs for not providing ventilation, and a further charge of making a false report was dismissed.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Feb. 5.—The month has opened well for the colliers. They start it with an advance in their wages of 7½ per cent., and with an arrangement, which I hope will be adhered to on all sides, that they are to have an advance of 2½ per cent. for every 4d. rise in the price per ton of coal. This arrangement was concluded in Chester last week at a meeting of the representatives of the masters and men, under the presidency of Mr. Darby, of Brymbo.

A new industry is opening out in the Vale of Clwyd—that of a pottery and brickworks. Valuable deposits of clay have been taken, which are situated near the Rhewl station, on the Ruthin and Denbigh Railway. There are two kinds of clay—a red marl and an ordinary surface clay of great purity. A company of local men of a very practical turn has been formed for working the deposits, and a successful trade is looked for.

The lead mines south-east of the village of Llanarmon seem hopeful and promising. Near the village there is a little mine—Plasddu—reopened, and worked by Capt. Evans and a few men, which is yielding some nice lead ore at a depth of 40 yards. The lode on which a mine was worked years ago is well shown on the surface running north-west or thereabouts. Where worked underground it is from 3 to 4 ft. wide, composed of carbonate of lime, with good lump and nests of lead ore, mixed with a little blende.

At Bodidris or Craigiog a little further south-east about 30 tons of ore have been carted away this week, and there is about 20 tons more in the bin ready to follow! Some nice ore is being brought to the dressing-floor, and I hope the supply will be largely increased when the engine-shaft is taken down to its intended depth. The country between this mine and Fron Hall Mine, a distance of about six miles, has the most desolute and ruinous aspect from a mining point of view that can be conceived. Massive engine-houses gutted of their machinery, and in every state of ruinous decay. Pit-heads without pulleys, scraps of broken rope, old shafts with rude fencing, old offices whose doors are rotting on their hinges, engines exposed to the atmosphere with cattle grazing around them, or rubbing themselves against the cylinders, are the common objects of this once famous mining region. The old Westminster Mines, Bryn-Alyn, Pant-ddu, Jamaica, Pwll-Wheel, Bryngwyn are examples. Yet within the last 25 years some of these mines were making large returns of ore, and the magnitude of the operations at some of them is marked by the extensive waste heaps that remain, and that to a traveller crossing the hills from the Vale of Clwyd look like huge fields covered with lime. Nor can we suppose that the mineral riches of the district are exhausted. Productive portions of the known lodes doubtless remain unworked and unexplored. Some signs of revival are apparent. Here and there a windlass or whim with a heap of new debris tells where persistent and undaunted miners are trying to found new mines. To these ventures, for the sake of the large mining population, whose cottages are so thickly dotted along the mountain road from Llanarmon to Mold, I wish success.

Full time has been resumed at the Penrhyn Slate Quarries. The slate quarries in the Dee Valley between Llangollen and Corwen are not busy. At Penarth Quarry not more than 15 men are said to be at work, and they not full time. The stocks on the wharves are heavy, and no loading is going on. The same remarks are also partly true of the great slate depôt at the Mold junction on the Chester and Holyhead Railway. The slate rows are very full, and but few wagons are loading—so that the revival in the trade is due, perhaps, more to an increased foreign demand than to an improved home trade.

Mr. F. F. Evans, Her Majesty's Inspector of Metalliferous Mines, has issued a circular to the mine managers of his district commending to their notice the inventions which are intended to prevent accidents from overwinding. A miner has been killed at the Roman Gravels Mine, Shropshire, by falling from one of the levels down the shaft.

TRADE OF THE TYNE AND WEAR.

Feb. 4.—The Coal and Coke Trades are, on the whole, brisk; the steam coal trade is expected to be fairly employed during the present month, and there is a good demand for forward delivery. At present Northumberland steam coal is from 8s. 6d. to 9s. 6d. per ton, and for some of the best coals 10s. per ton has been realised, and there is a prospect of a further advance. The house coal trade continues very dull; the increased demand for all kinds of coal and coke has not as yet had much effect on this description of coal. This is certainly remarkable; but it may, perhaps, be accounted for to some extent by the mildness of the winter, which has not, on the whole, been one of great severity. The demand for manufacturing coal improves, and it is evident that a much larger consumption of this coal must shortly take place at the iron furnaces. The coke trade continues very firm, indeed the demand exceeds the supply, as lately reported, and makers can command increased prices. Best furnace coke now commands 15s. to 16s. at the ovens, and 2s. per ton more for the second quarter. Higher rates are talked of in some quarters, and there is no doubt that 20s. per ton has been realised for small quantities. The make of coke will be largely increased during the present year if the demand continues, which appears extremely probable. The export trade at Tyne Dock has been rather light of late; the imports of Esparto grass, lead and iron ore have been important. Two steamers have brought 1400 tons of lead, and a large quantity of iron ore has been brought from Spain and Algeria. This ore goes direct from Tyne Dock to the furnaces in this and adjoining districts.

A very fine pumping-engine was started at one of the Stella Collieries, lately under the direction of Mr. J. B. Simpson. It was made by Messrs. Hathorn, Davey, and Co., of Leeds, and is a compound differential engine of large size. The engine is placed at the bottom of the shaft 60 fms. in depth, and the water is forced up the shaft by two rams, 6-ft. stroke, the main being 13 in. in diameter. When the engine is worked to its full power it will lift 1500 gallons of water per minute.

The iron trade continues to improve; in all parts of this district there is a rapidly increased demand for finished iron. The plate makers, the Consett Iron Co. and others, have booked orders which will keep them fully employed for a year at least. At Consett six furnaces are going, and are turning out nearly 3000 tons of pig-iron per week. This quantity, however, is insufficient to meet the increased demand, and the foundation of another furnace has been laid. In other districts the prospect is equally encouraging. At Seaham Harbour Messrs. Watson, Kipley, and Co.'s blast furnaces are under repair, and will be lighted as soon as practicable. The Thislington Colliery, the property of the Rosedale Iron and Coal Company, was offered for sale on Tuesday, but no offer was made for the works.

At a meeting of the Cleveland Engineers' Institution, on Monday, the President (Mr. Gjers) occupying the chair. Mr. Stead read a paper "On the Dephosphorisation of Iron." He said that he had made several experiments to ascertain the effect of manganese upon phosphate of lime, and also upon phosphate of manganese. From the results obtained he thought it was very clear that manganese not only acted very powerfully upon the phosphoric acid contained in phosphate of manganese, but that it also had a great reducing effect upon the phosphoric acid contained in phosphate of lime. He thought that these results went to prove that it was manganese which reduced the phosphoric acid from the cinder in the Bessemer converter. Mr. Stead stated that before long he hoped to give a most satisfactory explanation of this phenomenon.

The Chemical Trade continues very steady, there has been a large demand for soda crystals during the past week, and the price has advanced considerably. Shipments are mainly for London, as most of the continental ports are frozen up.

The iron shipbuilding works are generally busily engaged, and most of the ironworks, engine-works, and foundries are fairly employed at present on these rivers. It is expected that the Walker Ironworks will be started early next month. These works were the most extensive on the Tyne for a long period, but they have been closed a few years.

A general meeting of the North of England Institute of Mining and Mechanical Engineers will be held on Saturday, when a number of new members will be elected as usual, and the following papers will be read:—A Memoir of the late Mr. Thomas Sopwith, by Mr. T. T. Bewick; on the Muesler Lamp, by Mr. A. R. Sawyer; on improved safety lamps of the Davy and Muesler type, by Mr. James Ashworth.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Feb. 5.—In North Derbyshire there is now a movement on foot to obtain for the miners a 10 per cent. advance on the wages now being paid. Balloting papers were given out to test the feeling of the miners, and the result was in favour of giving notice to the colliery owners, 4000; against giving notice, 63; balloting papers not returned, 419. In other districts, from the reports received, it appears the men are not averse to throwing in their lot with those who are in favour of giving their employers notice. It was, however, agreed that no immediate action should be taken, so that other districts should be induced to act in the same manner as those who had voted in favour of giving notice. Should the men act as they say they intend doing the result can only be the stoppage of a number of collieries, and a vast amount of suffering, for the men have no funds on which to fall back. The employers are not in a position to make any advance, for the price of coals is now fully as low as it was during any part of last year, and this is clearly shown by the charges made in London and daily advertised. During last year many colliery owners lost heavily on the business done, and and no doubt have lost even during the present one, so that they are not likely to make any concession that will entail a still further loss upon them. However, the men, no doubt, will pause before they attempt a struggle in which they would be the great sufferers. The coal trade is certainly what may be said to be tolerably good, so far as the demand is concerned, but that does not advance prices, as the quantity thrown into the various markets is large, and the competition consequently keen. To London a heavy tonnage of house coal continues to be sent from Derbyshire by the Midland line, whilst a good deal has also been sent to the Eastern Counties, as well as to the West of England. Steam coal, however, does not go off so well, although perhaps of late rather more has been done in it. Makers of pig have been doing well for some considerable time past, the business being good and prices high, so that the dividends that will this year be paid by several companies will be considerably in excess of those of last year. In manufactured iron also more has been done at both the mills and foundries.

The trade in Sheffield gets more active in nearly every department, and the workmen are better off than they have been for some years. The Bessemer rail mills have as much as they can do, and the very high prices which now rule, so far from keeping back orders appear to have a contrary effect, showing that there is a belief that prices will still go higher. Crucible steel has also improved in request, and a good deal is being worked into wheels and axles. Orders from the United States and Australia are coming more freely to hand for cutlery and other goods, including Bessemer rails. Ship plates are being extensively rolled, and there is a heavy output of armour-plates for our own Government. The foundries are kept tolerably well going, and engineers and machinists are better employed, and the same may be said with respect to file, edge-tool, and saw makers.

In South Yorkshire the Coal Trade continues in a tolerably healthy state so far as relates to the production, but the complaints are still general as relates to the low prices which prevail for all qualities. A good deal continues to be sent to London and the South from the leading collieries by the Great Northern, but the tonnage would be largely increased were the rate lower than what it is. Shipments of steam coal from Grimsby have declined of late, and so have those from Goole, but a change for the better is now looked forward to. In small coal there has been no improvement, but a steady business continues to be done in coke for other iron-making districts.

At the Monk Bretton Colliery, near Barnsley, the men are still on strike, and there appears but slight prospect of an arrangement being come to. A number of non-Unionist men have been set on, whilst the old hands are looking to shopkeepers and publicans for support. In the same district the notices of the men at the Barrow Hematite Company's colliery expired on Wednesday last, but instead of bringing out their tools they agreed to continue working for another fortnight, so as to give the officials time for considering the demand made.

Mr. James Allport, the active and able general manager of the Midland Railway Company, and who has done so much to develope the mineral wealth of Derbyshire and the adjoining counties, retires from that position, and takes a seat on the directorate. He will be succeeded by Mr. W. Noble, the present assistant general manager, whilst Mr. R. Speight will occupy the place vacated by Mr. Noble.

THE STEPHENSON MEMORIAL HALL.—This fine hall, erected at Chesterfield to the memory of George Stephenson, the eminent engineer and inventor of the "Geordie" safety-lamp, is heavily encumbered with debt, and the matter has without solicitation been taken taken up by the workmen at some of the collieries, and a few days ago the men engaged aboveground by the Clay Cross Company subscribed nearly 18*l*. in furtherence of the movement to clear off the debt.

The Midland Railway Company's dividend is to be 6¼ per cent., as compared with 5¾ last year. This was made known on Tuesday, and the stock at once rose 2½ per cent.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

Feb. 5.—The final issue of shares in the Llanelly and Mynydd Mawr Railway has been made. The capital of the company is 60,000*l*., in 10*l*. shares, of which 5150 have been arranged for; and the remainder are now issued. The object of the company is to acquire the old Carmarthenshire tramway, about 12½ miles in length, connecting Llanelly Docks with the Mynydd Mawr coal fields at Crosshands, and converting it into a railway.

If report speaks truly the Rhymney Railway shareholders are to receive the splendid dividend of 10 per cent. per annum for the past half-year. In the corresponding half of the previous year it was at the rate of 8 per cent.

At the Pentre Police Court the Ynysfeio Colliery Company have been charged with dismissing one of their workmen illegally, and he claimed a month's wages. It appeared that defendant was a day haulier, and refused to do duty as a night haulier. The Bench decided in favour of the defendants.

The Iron Trade of the district has again been brisk during the past few days. Seldom have the docks had such a large quantity of iron and steel sent down for shipment. At the Alexandra Docks, Newport, the great facilities afforded have met no due encouragement. Thousands upon thousands of rails, cross-ends, and other material await shipment here, and further larger quantities are expected. Clearances have not been quite so large during the last few days, but mainly have gone to the United States, the demand still continuing steady for that quarter. A cargo of pig-iron has also been shipped to Antwerp. The demand for rails is fairly good, and prices, though nominally unchanged on the week, are advancing with steadiness. The excitement consequent of a somewhat sudden revival seems to have passed away, and the old plodding days come back. Bars are in recent average request, and stocks of pig-iron are disappearing. Scrap-iron is still in good demand. Many of the large works are in full swing. This is the case at Dowlais, and at Rhymney another furnace has been blown in. At the latter place an increase in wages has been accorded. Preparations are still being made to extend operations, and at several of the large establishments there is a demand for skilled hands, A number of ironworkers have recently gone to Scotland; but how they can do so in the face of advancing wages and better trade is a matter best explained by themselves. The Llynvi, Tondu and Ogmore Company has been under notice at the Chancery Division. The suits were Rucker *v.* Moffat and Bradley *v.* Chadwick. The Court was petitioned to sanction a scheme for the payment of creditors of the company upon the resuscitation of its operations, and the petition was presented by the liquidator appointed under the voluntary winding-up. The actions by the two debenture-holders were consolidated and the petition also asked that these actions may be stayed. An order was made staying the actions till further notice and sanctioning the scheme,

As for the Tin-Plate Trade the works are generally going briskly, but no material change in quotations can be noted. The Western Tin-Plate Works, some time ago started, are in full operation. They belong to Messrs. Smith, Harrison, and Forrester, of Barrow-in-Furness. The erection of new works at Aberavon has been begun. The men at Loughor have followed the example of those of Treforest, and passed a resolution in favour of establishing a board of conciliation.

So far as the Coal Trade is concerned it is very brisk. There have been orders received for the Admiralty at rates, it is understood, above those which prevailed a month ago. There is a good demand existing for all descriptions of coal, and proprietors set their faces against taking present rates for orders for forward delivery. In many cases, however, those for immediate delivery have been secured at a trifling advance in price. The demand for steam coal has been well kept up, and shipments have been on the increase. House coals have not sold off quite so well. So far the sliding scale seems to have met with general approbation, and a meeting of the Associated Masters has been held, at which, it is understood, the question of extending the area of the association was under consideration. Other firms, it appears, are anxious to adopt the sliding scale, and probably the Aberdare and Plymouth Company will be one of the first to join. The proprietors of the Ocean Collieries have issued a manifesto to their men praising their judgment in keeping to the scale they at first resolved on, and pointing out its advantages. The question, however, arises—Would it not be better to have one general scale for the whole district? Coal has been won, after persevering efforts, at the Torymyndd Colliery, Briton Ferry, and at the Mardy Colliery Mr. Christopher James, the proprietor, has given a supper to the workmen, on the occasion of coal being struck. The Gelli Collieries are to be further developed. Business in Anthracite coal has been brisker, and there are rather more orders obtainable for Patent Fuel. Coke is still brisk.

FOREIGN MINING AND METALLURGY.

The quantity of pig made in the Ruhr Basin last year was 650,712 tons, as compared with 631,794 tons in 1878. The quantity of iron produced last year was 489,557 tons, as compared with 430,185 tons in 1878. The quantity of steel made last year was 459,577 tons, as compared with 452,120 tons in 1878. There was thus an increase of 18,918 tons last year in the production of pig; an increase of 59,372 tons in the production of iron; and an increase of 7457 tons in the production of steel. A few months since steel rails were selling in Germany at 8*l.* per ton; last week a contract for such rails was let at 12*l.* 10s. per ton. At a recent adjudication for three iron bridges for the Berg and Mark Railway the lowest tender delivered was at the rate of 15*l.* 15s. per ton. The production of iron is, however, being largely increased in Germany, and this will, of course, prevent an extravagant further advance in prices.

An adjudication has taken place for 10,000 tons of iron rails to be supplied to the Belgian State Railways. The conditions provided that the rails should be paid for partly in cash and partly in old rails. The most advantageous tender was that of the Acoz Company, which offered to supply the whole lot at 2*l.* 8s. per ton in cash, and the balance in old rails. None of the other tenders proposed the delivery of the whole quantity of rails required, and the Sclessén Company demanded 2*l.* 12s. per ton in cash, while the Thy-le-Château Company stood out for 2*l.* 16s. in per ton in cash. The Angleur Steelworks has concluded contracts for the delivery of 13,500 tons of steel rails, at an average of 9*l.* 8s. per ton—5500 tons for the United States, and 8000 tons for the North of Spain; these latter rails are to be delivered 3000 tons in 1880, and 5000 in 1882.

The Parisian coal market has exhibited a good deal of animation. Deliveries of coal are, however, now being made regularly by railway, and cartage difficulties may be considered at an end. The winter being now well advanced French coal consumers are hoping that they will not be subjected to a repetition of the inconveniences to which they were exposed in December. In the Nord and the Pas-de-Calais the coal trade has shown considerable strength, and prices have advanced 10d. to 2s. 6d. per ton. The new Minister of Public Works, M. Varrsy, has intimated his intention to continue the development of the programme of public works drawn up by his successor in office, M. de Freycinet. The Nord and the Pas-de-Calais can then look forward with confidence to the construction of the proposed great canal from the Nord to Paris. This canal will enable coal to be brought from the North of France to Paris for 2s. 9d. per ton less than at present, so that it will be possible for the colliery proprietors of the Nord and the Pas-de-Calais to compete more effectually on the Paris market with English coal. On the other hand, the proposed increase in the depth of the Seine will enable English coal to be also delivered at Paris at a somewhat cheaper rate.

The Belgian coal trade has generally ruled very firm. Great complaints continue to be made as to the scarcity of trucks upon the Belgian State Railways.

AUSTRALIAN MINES.

SCOTTISH AUSTRALIAN.—The directors have received advices from Sydney, dated Dec. 22. The sales of coal from Lambton Colliery for the month of November amounted to 16,331 tons.

YORKE PENINSULA.—Kurilla Mine, Dec. 22: The following are extracts from Capt. Anthony's report—"The Kurilla lode: I have continued to drive the 55 fm. level east of Hall's shaft on the north branch of the lode. In width and ore value it has varied from a few inches to 4 feet and from 1 to 12 tons of 20 per cent. ore per fathom. It is now comparatively poor, but the wedge point of the next deposit has made its appearance, and I hope to see it open out again to a good lode. . . . After letting a contract to drive the tunnel at the 55 east of Hall's shaft to Morphett's lode the cross-course on which it is being driven narrowed and hardened, as I feared it would, on getting off the lode. I am glad, however, to say that it has opened out and is in some parts even softer than before; the tunnel is now over 13 fms. long. I may say in regard to this cross-course that should it continue as soft all the distance to Morphett's lode, this work will prove to be one of the best things that could possibly be done, and will to a very material extent affect the whole of our future operations. It is my present intention to reach Morphett's lode, say in two months from now, and drive east under Morphett's engine shaft, to drain the lode. As there is only a small quantity of water in Morphett's shaft, and should the tunnel only partially drain it I am hopeful of being able to sink Morphett's engine-shaft to the 55 without pumping. Hall's engine would then be devoted to draining both lodes as well as the north branch, and Morphett's engine would be left to wind only. At the hauling shaft at the 45 fm. level I have put in a cross-cut south about 2½ fms., to intersect a wall that was left in the said shaft below the 35, and from which the water has been flowing freely since the Devon Consols ceased pumping from the sections east of this mine. I have cut the wall, and am driving east on it. There are some good stones of ore, floating rather than regular, and the water indicates the continuance of the vein. The stope in the 55 east is yielding a fair quantity of ore.—Morphett's Lode: At the 43 fm. level east I drove north about 8 ft., and cut a branch of good ore, and then turned east, in which direction I am now driving on what appears to be the north wall of the lode. It is yielding 2 tons of 20 per cent. ore per fathom. I have continued to drive west at the 43, carrying a compact but small vein of good ore of great regularity, worth (say) 1½ ton of 17 per cent. ore per fathom. The stopes throughout this lode continue to yield the usual quantity of ore. I may say that the stope in the extreme east of the 30 fm. level is of special interest at this time. First at the 20 in the drive on the cross-course in driving towards the north branch, a wall indicated a very wide lode. The level was driven on the middle wall, subsequent operations disclosing the terminal south wall, which is now producing some good ore in two pitches at the 30 and 20. The winze in the wide part was sunk on the south wall. Recently it was found 10 ft. to stope the lode from this winze westward. This last operation led to the necessity of cutting into the terminal north wall, which at present seems to be the same as the one cut in driving on the cross-course at the 20, as above. I am carrying 6 ft. of the north part of the lode, leaving from 8 to 10 ft. of the south part standing to be dealt with at some future time. I need hardly say that this lode of some 14 to 16 ft. wide is not composed of solid ore. I wish, however, to say that ore runs throughout it from wall to wall, and the yield had we crushing machinery would be not less than 8 tons of 17 per cent. ore per fathom, and the quantity to be raised is immense. The recently driven cross-cut at the 43 confirms the great width of this lode as deeper points are reached. No time should be lost in procuring efficient means of utilising the scattered ore in this part of the mine. As it is we cannot return one-half of its otherwise available yield.—The North Branch, or New Lode: At the 43, east of Morphett's shaft, I have driven on the cross-course (the same I believe as the one on which the tunnel is being driven at the 55, east of Hall's shaft) north, and cut first the western portion and then the eastern portion, the displacement being about 8 ft. On the west side of the drive the branch is about 6 in. wide, worth 1½ ton of 24 per cent. ore to the fathom, while on the east side it is 8 in. wide, and worth 2 tons of 24 per cent. ore per fathom. . . . The winze sinking below the 10 is nearly holed to the 20. Two men are stoping some good ore in the winze from the 20 to the 30. Throughout the mine there is much to encourage a vigorous mode of carrying out all our present operations, and to go deeper on each lode. The ore actually sold or shipped from month to month does not represent the whole present yield of the mine, as a large quantity is being laid aside for crushing and reducing. And then, such places as would yield payable ore—but not good enough without crushing—are of necessity being neglected. Of this I shall have more to say in my next report after the expiration of this year.—Ore Returns: Raised during the month 200 tons of 16 per cent.; shipped per St. Vincent 50 tons of 18¾ per cent.; preparing for sale in the colony (freights to London having risen) 200 tons of 17 per cent. The committee advise that they have instructed Capt. Anthony at once to go on sinking Hall's shaft below the 55. The directors have provided crushing and dressing machinery for utilising the large quantity of low class ore available at the mine, the vessel taking out the engine to drive it having sailed nearly a montn ago.

FORTESCUE.—The discovery in Fortescue (Stannagwyn) Mine telegraphed last week appears in no way exaggerated, as this week's report shows. It has caused considerable excitement in Plymouth and St. Austell, the lode being valued at over 200*l.* per fathom.

MR. ABSALOM BENNETT, of Marazion, Cornwall died suddenly on Wednesday night. He had been staying with some friends at Penzance, and retired to rest as usual. An hour later his cough became troublesome and he got out of bed. His friends became alarmed and sent for medical aid, but death resulted in a few minutes. Mr. Bennett had been for many years intimately connected with mining, and had seen a great deal of the various vicissitudes pertaining to that enterprise. He was one of the lords of Wheal Jewell, in Marazion parish, which is now to be reworked, and was most sanguine as to the result of that undertaking. In the midst of all the depression in mining Mr. Bennett always had great faith in a reaction setting in, and his decease has occurred at a time when his predictions seemed about to be realised.

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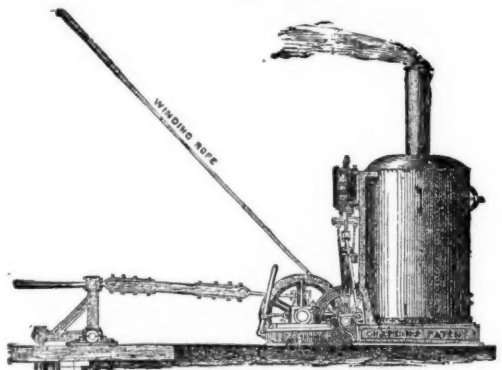

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The Machine can be seen at work daily at the Brickworks of the Patentees, JOSEPH FIRTH AND SONS, WEBSTER HILL, DEWSBURY, as also their Patent Gas Kiln for Burning Bricks, which possesses the following amongst other advantages, viz.:—Economy in Fuel, Rapidity and Quality of Work, even Distribution of Heat, and Total Consumption of Smoke.

[*See Illustrated Advertisement every alternate week.*]

THE BIRMINGHAM RAILWAY CARRIAGE AND WAGON COMPANY

(LIMITED

MANUFACTURE RAILWAY CARRIAGES and WAGONS of EVERY DESCRIPTION, for HIRE and SALE, by IMMEDIATE or DEFERRED PAYMENTS. They have also WAGONS FOR HIRE capable of carrying 6, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract.

MANUFACTURERS also of IRONWORK, WHEELS, and AXLES.

EDMUND FOWLER, Managing Director.

WORKS,—SMETHWICK, BIRMINGHAM.

TO MINERS IN NORTH AMERICA.

CHEMICAL LABORATORY AND GENERAL MINING OFFICES.

J. S. PHILLIPS, M.E.,

702, CALIFORNIA STREET, SAN FRANCISCO

EXAMINER OF MINES, MINERAL ASSAYER, &c.

Practical Instructions for Testing and Assaying, by Blowpipe, Chemicals, Crucible Scorifier, &c.

Author of the "Explorers', Miners,' and Metallurgists' Companion," a practical work of 672 pages, with 81 illustrations. Price, second edition, $10·50.

Inventor of the "WEE PET" Assaying Machine, which obtained a GOLD MEDAL at the San Francisco Mechanics Institute Fair of 1869. Price $100.

Having had Thirty Years' experience (twenty in Cornwall and ten in U.S., America), offers his services to those requiring ADVICE on MINES or MINING, ENGINEERING, ASSAYING, SMELTING, MILLING, and CHEMICAL REDUCTION.

REFERENCES.

In England—The London *Mining Journal*, and leading Cornishmen.

In California—The *Mining and Scientific Press*, and principal Miners.

CALIFORNIAN AND EUROPEAN AGENCY.

209, LEIDESDORFF ST., SAN FRANCISCO, CALIFORNIA.

THIS AGENCY is prepared to make Investments in approved REAL ESTATE, MINING PROPERTIES, MINING STOCKS, &c., and to INVEST MONEY in FIRST-CLASS SECURITIES in CALIFORNIA, and the neighbouring States.

Also to AFFORD INFORMATION and ADVICE to parties abroad who may contemplate or may have already invested in Enterprise on the Pacific Coast, and to take charge of Property, and to look after the interests of absentees.

AGENT IN LONDON—C. MORE, 30, Bush-lane, Cannon-street, E.C.

FOR SALE, SHEEP FARMS in CALIFORNIA and OREGON. Also, LARGE and VALUABLE TRACTS of FREEHOLD LAND, suitable for speculation, companies, and colonization.

Apply at 30, Bush-lane, Cannon-street, E.C.

EDWARD J. JACKSON, 209, Leidesdorff-street, San Francisco, Cal.

REFERENCES:

Wm. Lane Booker, Esq., H. B. Majesty's Consul, S. F.; the Honorable Leland Stanford, Ex-Governor of California and President of the Central Pacific Railroad, S. F.; the Right Rev. Wm. Ingraham Kip, D.D., LL.D., Bishop of California; the Rev. William Vaux, Senior Chaplain U.S.A., Santa Cruz, Cal.; the Anglo-Californian Bank, San Francisco, California; the Anglo-Californian Bank, No. 3, Angel-court, Throgmorton-street, London, E.C.

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Geological examinations; reports on mining properties; surveys mines, railroads, and canals, and superintends the workings of the same; prepares estimates and plans for opening and working mines. Expert on mining questions before the Courts.

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At BERNALLILLO, NEW MEXICO, U.S. OF AMERICA.

Has 24 years' experience in Mining and Smelting, and 10 years experience in American Business and Law, offers his services at moderate chargesfor Reporting on Mining and other Property in any of the above-named States or Territories gives correct, safe, and responsible advice as to securing full titles and possession and, as to best mode of utilising the property, will assist in settling existing difficulties by compromise, and in disposing of developed mining property when held at real value; offers his assistance for securing undeveloped mining properties at home prices. As to care taken in reporting, reference is made to the *Mining Journal* Supplement, April 1, 1876, containing a report on property of the Maxwell Land Grant and Railway Company; as to technical standing, to the prominent men of the trade—compare *Mining Journal* of Aug. 30 and Nov. 31, 1872, and *New York Engineering and Mining Journal*, Feb. 28, 1874.

INCREASED VALUE OF WATER-POWER.

MacADAM'S VARIABLE TURBINE.

This Wheel (which is now largely in use in England, Scotland, and Ireland) is the only one yet invented which gives proportionate power from both large and small quantities of water. It can be made for using a large winter supply, and yet work with equal efficiency through all variations of quantity down to a fifth, or even less if required. It is easily coupled to a steam-engine, and in this way always assists it by whatever amount of power the water is capable of giving, and therefore saves so much fuel.

This Turbine is applicable to all heights of fall, It works immersed in the tail-water, so that no part of the fall is lost, and the motion of the Wheel is not affected by floods or back-water.

References to places where it is at work will be given on application to—

MacADAM BROTHERS AND CO., BELFAST.

JOHN WILLIAMS AND CO.,

WISHAW, SCOTLAND,

MANUFACTURERS OF ALL KINDS OF

Cut and Lath Nails; Joiners', Moulders', and Flooring Brads; Copper and Zinc Cut Nails; Colliery Plate Nails; Washers, Boiler Plates, Tube Strips, Sheet Iron for Galvanising and other purposes.

PRICE LIST ON APPLICATION.

PARIS EXHIBITION, 1878.

GOLD AND SILVER MEDALS AWARDED for Steam-Engines & Boilers, also the Special Steam Pump, and Compound Pumping Engine.

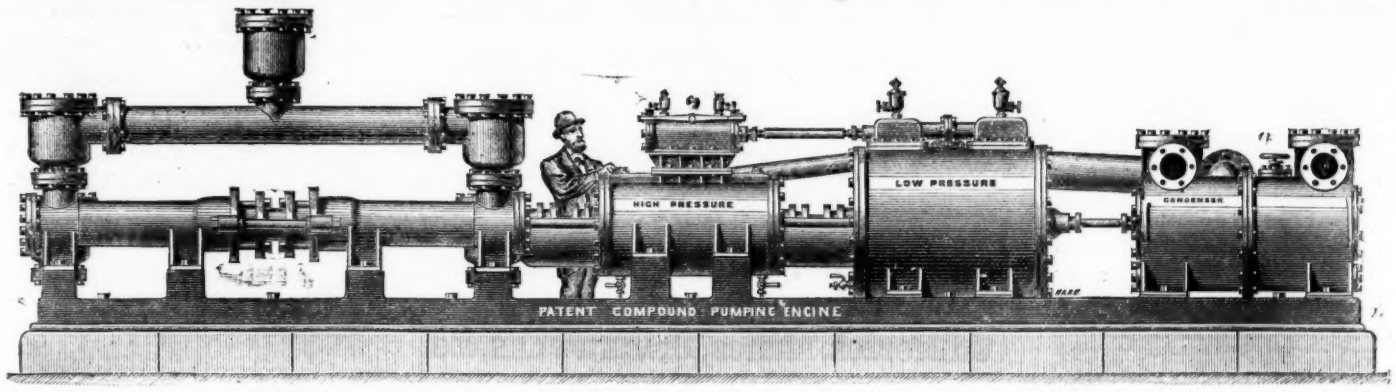
TANGYE BROTHERS AND HOLMAN,

CORNWALL HOUSE, 35, QUEEN VICTORIA STREET, LONDON, E.C.,
AND BIRMINGHAM, (TANGYE BROTHERS), CORNWALL WORKS, SOHO.

TANGYE'S DIRECT-ACTING
COMPOUND PUMPING ENGINE,

For use in Mines, Water Works, Sewage Works,

And all purposes where Economy of Fuel is essential.



TANGYE'S DIRECT-ACTING COMPOUND PUMPING ENGINE, WITH AIR-PUMP CONDENSER.

TANGYE'S COMPOUND PUMPING ENGINE COMBINES SIMPLICITY, CERTAINTY OF ACTION, GREAT ECONOMY IN WORKING, COMPACTNESS, AND MODERATE FIRST COST.

This Engine will be found the most simple and economical appliance for Mine Draining, Town Water Supply, and General Purposes of Pumping ever introduced, and as regards Mine Draining, the first cost is very moderate compared with the method of raising water from great depths by a series of 40 or 50 fm. lifts. No costly engine-houses or massive foundations, no repetition of plunger lifts, ponderous connecting rods, or complication of pitwork, are required, while they allow a clear shaft for hauling purposes. In this Engine the economical advantages resulting from the expansion and condensation of steam are very simply and effectively obtained. The steam after leaving the high-pressure cylinder is received into and expanded in the low-pressure cylinder, and is thus used twice over before being exhausted into the condenser or atmosphere.

The following first-class Testimonials will bear evidence as to the efficiency and economy of the Engine:—

TESTIMONIALS OF TANGYE'S COMPOUND PUMPING ENGINE.

21" Newcastle and Gateshead Water Company, Newcastle-on-Tyne, Oct. 20, 1879.
36 × 10" × 48" COMPOUND CONDENSING STEAM PUMPING ENGINE.
Messrs. Tangye Brothers.

GENTLEMEN,—In reply to your enquiry as to the efficiency of the two pairs of Compound Condensing Engines recently erected by you for this company at our Gateshead Pumping Station, I have great pleasure in informing you that they have far surpassed my expectations, being capable of pumping 50 per cent. more water than the quantity contracted for; and by a series of experiments I find they work as economically as any other engine of the compound type, and will compare favourably with any other class of pumping engine. By the simplicity of their arrangement and superior workmanship they require very little attendance and repairs, and the pumps are quite noiseless. A short time ago I had them tried upon air by suddenly shutting off the column, and found they did not run away, thus showing the perfect controlling or governing power of the Floyd's Improved Steam-moved Reversing Vale. I will thank you to forward the other two pairs you have in hand for our Benwell Pumping Station. Yours respectfully,

(Signed) JOHN R. FORSTER, Engineer.

The Chesterfield and Boythorpe Colliery Company (Limited),
21" Registered Office, Boythorpe, near Chesterfield, Oct. 1, 1879.
36 × 12" × 48" DOUBLE RAM COMPOUND CONDENSING STEAM PUMPING ENGINES.
Messrs. Tangye Brothers. Supplied in January, 1878.

GENTLEMEN,—Referring to the above, which we have now had working continuously night and day for the last 12 months, we are glad to say that it is giving us every satisfaction. It is fixed about 400 feet below the surface, the steam being taken down to it at pressure of 45 lbs. per square inch. We can work the pump without any difficulty at 28 strokes per minute=224 ft. piston speed. The pumping power is enormous. The vacuum in the condenser being from 11½ to 13 lbs. The pump is easily started, and works well and regularly. The amount of steam taken being much less than we anticipated. We consider the economy in working very satisfactory indeed. The desire for power and economy at the present day will certainly bring this pump into great requisition. Yours truly,

(Signed) M. STRAW, Manager.

SIZES AND PARTICULARS.

Diameter of High-pressure Cylinder	In.	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
Ditto of Low-pressure Cylinder	In.	14	14	14	18	18	18	18	21	21	21	21	24	24	24	24
Ditto of Water Cylinder	In.	4	5	6	5	6	7	8	6	7	8	10	7	8	10	12
Length of stroke	In.	24	24	24	24	24	24	24	24	24	24	24	36	36	36	36
Gallons per hour approximate		3900	6100	8800	6100	8800	12,000	15,650	8,800	12,000	15,650	24,450	12,000	15,650	24,450	35,225
Height in feet water can be raised with 40 lbs. pressure per square inch in cylinder	Non-condensing	360	330	160	360	250	184	140	360	264	202	130	360	275	175	122
Ditto ditto	ditto—with Holman's Condenser	480	307	213	480	333	245	187	480	352	269	173	480	367	234	162
Ditto ditto	ditto—with Air-pump Condenser	600	384	267	600	417	306	335	600	440	337	216	600	459	203	203

CONTINUED.

Diameter of High-pressure Cylinder	In.	16	16	16	16	18	18	18	18	21	21	21	24	24	24	30	30
Ditto of Low-pressure Cylinder	In.	28	28	28	28	32	32	32	32	36	36	36	42	42	42	52	52
Ditto of Water Cylinder	In.	8	10	12	14	8	10	12	14	10	12	14	10	12	14	12	14
Length of stroke	In.	36	36	36	36	48	48	48	48	48	48	48	48	48	48	48	48
Gallons per hour approximate		15,650	24,450	35,225	47,950	13,650	24,450	35,225	47,950	24,450	35,225	47,950	24,450	35,225	47,050	35,225	47,950
Height in feet water can be raised with 40 lbs. pressure per square inch in cylinder	Non-condensing	360	230	160	118	456	292	202	149	397	276	202	518	360	264	562	
Ditto ditto	ditto—with Holman's Condenser	480	307	213	154	603	389	269	198	528	363	269	691	480	352	750	
Ditto ditto	ditto—with Air-pump Condenser	600	384	267	191	750	486	337	248	660	450	337	864	600	440	937	

PRICES GIVEN ON RECEIPT OF REQUIREMENTS.

Any number of these Engines can be placed side by side, to work in conjunction or separately as desired, thereby multiplying the work of one Pump to any extent.

NORTHERN DEPOT:—TANGYE BROTHERS, St. NICHOLAS BUILDINGS, NEWCASTLE-ON-TYNE.

TWO GOLD MEDALS.

SOLE MAKERS—

The LEEDS FORGE CO., Ltd.,
Leeds, Yorkshire.

FOX'S PATENT
CORRUGATED FURNACE FLUES,

NOW APPLIED TO OVER

10000 IND. H.P.

PARIS, 1878.

PRICE LISTS AND PARTICULARS ON APPLICATION.

Awarded Gold Medal, Paris Exhibition, 1878.

HADFIELD'S STEEL FOUNDRY COMPANY.

FIRST PRIZE MEDALS AT LEEDS, MANCHESTER, AND WREXHAM EXHIBITIONS, 1875 AND 1876.

ATTERCLIFFE, SHEFFIELD,

DEVOTE THEIR EXCLUSIVE ATTENTION TO THE MANUFACTURE OF

CRUCIBLE STEEL CASTINGS,

FOR

Engineering & Mining Purposes,

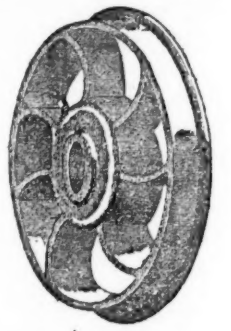
AND ARE THE SOLE MAKERS OF

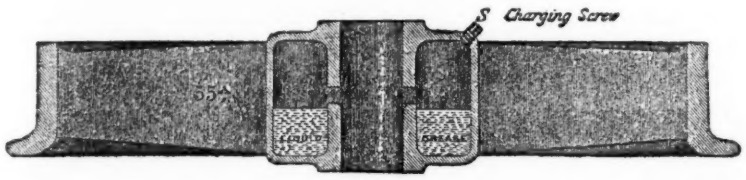
Hadfield's Self-oiling Steel Wheels

(PATENTED).

These possess advantages held by no other wheels, and are specially adapted for Collieries, Ironstone Mines, Slate Quarries, Lead and Copper Mines, &c., &c., where LOOSE Wheels are used (*i. e.*, those revolving upon their own axles). By the old system of lubricating loose wheels, it is well known thisis attended with constant labour and excessive waste; and as so little of the grease or oil applied reaches the wearing surfaces, and as re-greasing can only take place at fixed parts of the workings, the bosses of the wheels and bearings of the axles soon become dry, and cut each other: thus causing enormous wear and tear, and necessitating extra labour, haulage power, and expense. These and numerous other defects are entirely remedied by these wheels, as will be readily seen from the following illustrations and advantages claimed.

N.B.—Price per set of Wheels and Axles (ready for use) forwarded on receipt of—1. Diameter of Wheel on tread. 2. Width of tread. 3. Diameter and total length of axle, also whether No. 74 or 75. 4. Rail gauge. 5. Rolling load.





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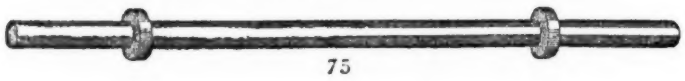
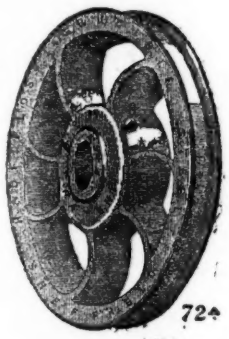




This Advertisement is varied from time to time.

The following are a few of the numerous Advantages claimed by the above Self-oiling Wheels :—

1.—Two-thirds (at least) less grease or oil is required than at present used by any known method of lubricating Mining Wagons, whether by hand, machine, or otherwise.
2.—These wheels effect a very great saving in haulage power; also wear and tear—being so constructed as never to allow the bearings to become dry. The revolving of the wheel leads out the oil as required, and immediately the wagon stops the lubricator ceases its action.
3.—No waste of grease can occur, no matter in what position the wagon may be placed, when discharging its contents (even if up side down); and when the wagons are not in use it is utterly impossible for any grease to escape, as it is all stored below the outlet (as shown above).
4.—When once these wheels have been charged with liquid grease (which can be done by any inexperienced person) they do not require any attention or re-greasing whatever for several weeks or even months afterwards, in proportion to the distance travelled.
5.—These wheels can be readily fixed to any description of either wood or iron corves now in use, whether the wheels are upon the inside or outside of the frame.
6.—They are exceedingly simple in construction, have no detail, and are not liable to get out of order.
7.—They possess great strength, durability, and extreme lightness, being made of CRUCIBLE STEEL.

Where **FAST** Wheels and Axles are adopted instead of Loose ones, *as shown above*, see our Illustrated Sheets of Drawings Nos. 2 and 3 of

Crucible Steel Wheels and Axles, fitted complete by Hadfield's Patent Method, and Hadfield's Self-oiling Pedestals.

MACHINE MOULDED STEEL GEAR WHEELS OF EVERY DESCRIPTION.

MINING AND COLLIERY TOOLS.

Picks, Shovels, Rakes, Riddles, Skips, Blowing Tools, Pit Tubs, Crucible Cast Steel Wheels and Axles, Tram Nails, Bolts and Nuts, Washers, Wagon Wheels and Axles, Springs, Chains and Traces, Harness, Files, Lifting Jacks, Crabs, Cranes, Pulley Blocks, Pit and other Rails, Screen Bars, Air Pipes, Brattice Cloth, Gas Steam and Water Pipes, Loco Tubes, Smiths' Hearths complete, Smiths' Tools, Powder Magazines and Safes, Wire and Hemp Ropes, Pit Tub and Wagon Ironwork of every description.

A LARGE STOCK ALWAYS ON HAND.

F. H. WARDEN (LATE THOS. WARDEN & SON),
BROMFORD IRON & STEEL WORKS, LIONEL ST., BIRMINGHAM.

PATENT

STEEL TRAMS AND TIPPING TRUCKS.

STEEL (OR IRON) TRAMS AND TIPPING TRU
Patented in Europe, America, and British South A
Lightest and strongest made.

R. HUDSON,
GILDERSOME FOUNDRY, NEAR LEED

GEOLOGY.—In the Preface to the Student's Elements of Geology, by Sir CHARLES LYELL, price 9s., he says—"As it is impossible to enable the reader to recognise rocks and minerals at sight by aid of verbal descriptions or figures, he will do well to obtain well-arranged collections of specimens, such as may be procured from Mr. TENNANT (149, Strand), Teacher of Mineralogy at King's College, London." These collections are supplied on the following terms, in plain mahogany cabinets:—

100 specimens, in cabinet, with	3 trays	£ 2	2 0
200 " "	5 "	5	5 0
300 " "	9 drawers	10	10 0
400 " "	13 "	21	0 0

More extensive collections at 50 to 5000 guineas each.
Mr. TENNANT gives instruction in Geology and Mineralogy at 149, Strand.

At the PARIS EXHIBITION the Jurors have Awarded

THE GOLD MEDAL, THE SILVER MEDAL, AND HONOURABLE MENTION

FOR MY LATEST PATENTED STONE BREAKERS AND ORE CRUSHERS.

Stones broken equal, and Ores better, than by hand, at one-tenth the cost.

H. R. MARSDEN,

ORIGINAL PATENTEE AND SOLE MAKER OF BLAKE'S

Improved Patent Stone Breakers & Ore Crushers.

New Patent Reversible Jaws, in Sections, with Patent Faced Backs.

NEW PATENT ADJUSTABLE TOGGLES.

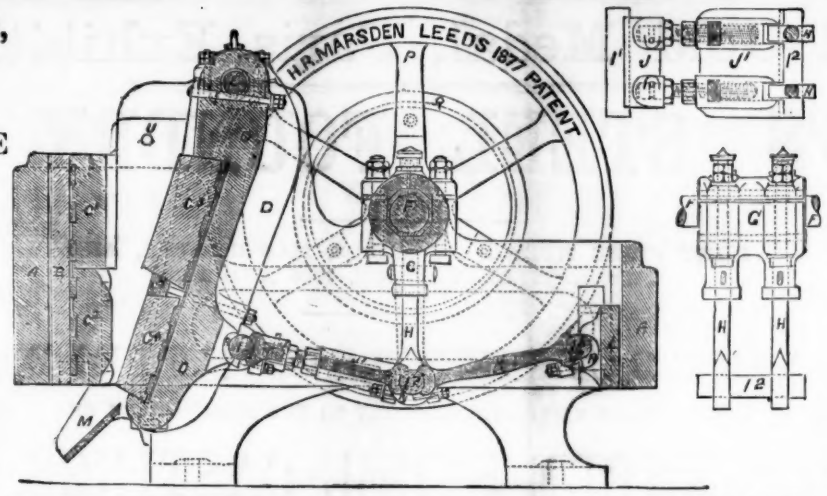
OVER **2500** IN USE.

New Patent Draw-back Motion.

NEW PATENT STEEL TOGGLE BEARINGS.

70

PRIZE MEDALS.



READ THIS—

Wharthole Lime Works, Maryport, Whitehaven, November 7, 1873.

H. R. MARSDEN, Esq., Soho Foundry, Meadow-lane, Leeds.

DEAR SIR,—The machine I have in use is one of the largest size, 24 in. by 12 in. The quantity we are breaking daily with this one machine is 250 tons, the jaw being set to break to a size of 2½ in. We have, however, frequently broken over 300 tons per day of ten hours, and on several occasions over 360 tons during the same period. The stone we break is the blue mountain limestone, and is used as a flux in the various ironworks in this district. We have now had this machine in daily use for over two years without repairs of any kind, and have never had occasion to complain of any inconvenience in using the machine. I hope the one you are now making for me may do its work equally well. The cost—INCLUDING ENGINE-POWER, COALS, ENGINEMAN, FEEDING, and all EXPENSES OF EVERY KIND—is just 3d. per ton. Should any of your friends feel desirous of seeing one of your machines at work, I shall have much pleasure in showing the one alluded to.

I am, dear Sir, yours very truly,
WILLIAM MILLER.

AND THIS—

Wharthole Lime Works, Aspatria, Cumberland, July 11th, 1878.

H. R. MARSDEN, Esq., Soho Foundry, Leeds.

DEAR SIR,—We are in receipt of your letter of 4th inst. I may just state that the stone breaker above named has been under my personal superintendence since its erection, and I have no hesitation in saying that it is as good now as it was five years ago.

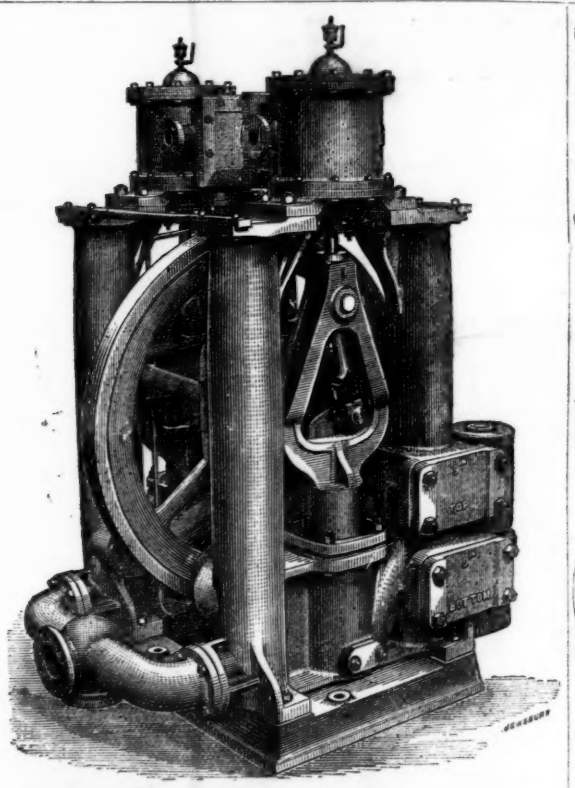
I am, dear Sir, yours faithfully,
FRANCIS GOULD.

GREATLY REDUCED PRICES ON APPLICATION.

ALL BEARINGS are renewable, and made of H.R.M.'s Patent Compound ANTIFRICTION METAL.

CATALOGUES, TESTIMONIALS, &c.

H. R. MARSDEN, SOHO FOUNDRY, LEEDS, ENGLAND.



STEAM PUMPS for COLLIERY PURPOSES, specially adapted for Forcing Water any height; also for Sinking; and for Feeding Boilers.

JOHN CAMERON has made over SIX THOUSAND.

WORKS: OLDFIELD ROAD, SALFORD, MANCHESTER.

SILVER MEDALS AWARDED AT CORNWALL POLYTECHNIC 1872 AND 1876.

THE WELL-KNOWN PATENT SELF-ACTING ORE DRESSING MACHINERY, as in operation at most of the large Mines in the Kingdom and Abroad, is now supplied solely by THE PATENTEE AND MANUFACTURER, Mr. GEORGE GREEN, Mining Engineer, AT GREATLY REDUCED PRICES; also all descriptions of Mining Machinery, including

GOLD AND SILVER AMALGAMATING MACHINERY, complete. Stamp Mills, Water Wheels, Steam Engines, &c.

ROLLER SHELLS FOR CRUSHING MILLS—a speciality.

SPECIAL DESIGNS FOR EXPORT AND DIFFICULT TRANSIT.

Prices and particulars on application to the Manufactory, ABERYSTWITH, SOUTH WALES.

THE GREAT ADVERTISING MEDIUM FOR WALES.

THE SOUTH WALES EVENING TELEGRAM (DAILY), and SOUTH WALES GAZETTE (WEEKLY), established 1857.

The largest and most widely circulated papers in Monmouthshire and South Wales. Chief Offices, NEWPORT, Mon.; and at CARDIFF.

The "Evening Telegram" is published Daily, the First Edition at 3 P.M.; the Second Edition at 5 P.M. On Friday, the "Telegram" is combined with the "South Wales Weekly Gazette," and Advertisements ordered for not less than Six Consecutive Insertions will be inserted at an Uniform Charge in both papers. P.O.O. and Cheques payable to HENRY RUSSELL EVANS, 14, Commercial-street, Newport, Monmouthshire.

THE NEWCASTLE DAILY CHRONICLE (ESTABLISHED 1764).

THE DAILY CHRONICLE AND NORTHERN COUNTIES ADVERTISER, Offices, Westgate-road, Newcastle-upon-Tyne; 58, Howard-street, North Shields; 195, High-street, Sunderland.

THE "CHAMPION" ROCK BORER

MINE AND QUARRY STANDS, STEEL DRILLS, SPECIALLY PREPARED INDIARUBBER HOSE, TESTED IRON PIPES, &c.

Air-Compressing Machinery,

Simple, strong, and giving most excellent results, and

ELECTRIC BLASTING APPARATUS.

Full particulars of rapid and economical work effected by this machinery, on application.

R. H. HARRIS, late

ULLATHORNE AND CO., Mechanical and Consulting Engineers, 63, QUEEN VICTORIA STREET, LONDON, E.C.

HIGHEST AWARDS:—

PARIS EXHIBITION, 1878.
YORK EXHIBITION, 1879.

SALMON, BARNES, & CO.,

MANUFACTURERS OF THE PATENT

ROANHEAD ROCK DRILL,

ALSO OF

ATKINSONS PATENT

PARIS EXHIBITION, 1878.

FEEDWATER HEATER.

FULL PARTICULARS AND PRICES ON APPLICATION.

Canal Head Foundry and Engineering Works, Ulverston, LANCASHIRE.

GOLD MEDAL AWARDED, PARIS EXHIBITION 1878.

THOMAS TURTON AND SONS,

MANUFACTURERS OF

MINING STEEL of every description.

CAST STEEL FOR TOOLS. CHISEL, SHEAR, BLISTER, & SPRING STEEL

MINING TOOLS & FILES of superior quality.

EDGE TOOLS, HAMMERS, PICKS, and all kinds of TOOLS for RAILWAYS, ENGINEERS, CONTRACTORS, and PLATELAYERS. LOCOMOTIVE ENGINE, RAILWAY CARRIAGE and WAGON SPRINGS and BUFFERS.

SHEAF WORKS AND SPRING WORKS, SHEFFIELD.

LONDON OFFICES—90, CANNON STREET, E.C. PARIS DEPOT—12, RUE DES ARCHIVES. BOSTON, MASS., U.S.—40, KILBY STREET.

J. WOOD ASTON AND CO., STOURBRIDGE

(WORKS AND OFFICES ADJOINING CRADLEY STATION),

Manufacturers of

CRANE, INCLINE, AND PIT CHAINS,

Also CHAIN CABLES, ANCHORS, and RIGGING CHAINS, IRON and STEEL SHOVELS, SPADES, FORKS, ANVILS, VICES, SCYTHES, HAY and CHAFF KNIVES, PICKS, HAMMERS, NAILS, RAILWAY and MINING TOOLS, FRYING PANS, BOWLS, LADLES, &c., &c.

Crab Winches, Pulley and Snatch Blocks, Screw and Lifting Jacks, Ship Knees, Forgings, and Use Iron of all descriptions.

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